

OPEN MEETING

MEMORANDUM

TO: THE COMMISSION

FROM: Utilities Division

DATE: November 4, 2022

RE: IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2022 ENERGY EFFICIENCY IMPLEMENTATION PLANS AND FOR A WAIVER UNDER A.A.C R14-2-2419. (DOCKET NO. E-01933A-21-0182)

INTRODUCTION

Enclosed are the Commission Staff's memorandum and proposed order In the Matter of the Application of Tucson Electric Power Company for Approval of its 2022 Energy Efficiency Implementation Plans and for a Waiver Under A.A.C R14-2-2419 (Docket No. E-01933A-21-0182). This is only a Staff recommendation to the Commission; it has not yet become an order of the Commission. The Commission may decide to accept, amend or reject Staff's proposed order.

Any party who wishes to comment on this matter may appear before the Commission at its regular open meeting scheduled for **November 9, 2022**, and **November 10, 2022**, or may file comments in Docket Control.

This matter may be scheduled for Commission deliberation at its Open Meetings scheduled **November 9, 2022**, and **November 10, 2022**.

If you have any questions about this matter, please contact Cameron Nance of our Staff at (602) 542-4227, or Elijah Abinah, Director, at (602) 542-6935.

BACKGROUND

On June 1, 2021, Tucson Electric Power Company ("TEP" or "Company") filed an Application requesting the Arizona Corporation Commission ("Commission") approval of the Company's 2022 Energy Efficiency ("EE") Implementation Plan ("2022 EE Plan") pursuant to the Arizona Administrative Code ("A.A.C.") R14-2-2401 through R14-2-2419 ("EE Rules"). On March 16, 2022, TEP supplemented its request that its 2022 EE Plan also be considered and approved as the Company's 2023 EE Plan ("2022-2023 Plan").

On June 13, 2022, TEP supplemented the 2022-2023 Plan to include an Advanced Rooftop Control ("ARC") Pilot program and proposed increases to the original budget from \$22.9 million to \$23.8 million while also raising the Demand-Side Management ("DSM") Surcharge of \$0.0028898 per kilowatt-hour ("kWh") for residential customers to \$0.00303423, and the 2.8292

percent of non-residential customer bills to 2.8597 percent, before the Renewable Energy Surcharge (“RES”), Lost-Fixed Cost Recovery (“LFCR”), assessments, and taxes.

On September 30, 2022, TEP updated its 2022-2023 Plan to conform with Decision No. 78673, which ordered TEP to redeploy approximately \$12.4 million of collected but unspent funds toward four specific programs.

TEP’s current EE Implementation Plan (“2018 EE Plan”) was approved in Decision No. 77085 (February 20, 2019).

2022-2023 ENERGY EFFICIENCY IMPLEMENTATION PLAN

TEP’s proposed 2022-2023 EE Plan would: (i) add one new pilot program; (ii) continue existing Commission-approved programs with proposed modifications; (iii) add 22 new program measures; (iv) discontinue one existing program (Electric Vehicles [“EVs”]); (v) introduce two new DSM initiatives; (vi) combine three programs (Commercial New Construction [“CNC”] and Small Business Direct Install programs into the Commercial and Industrial [“C&I”] Comprehensive program); and (vii) discontinue 12 commercial sector initiatives due to a lack of cost effectiveness. TEP has designed its 2022-2023 EE Plan to yield an estimated 146,601 Megawatt-hours (“MWh”) of annual energy savings and providing approximately 72.18 Megawatts (“MW”) of peak demand savings.

The focus of the Commission Utilities Division Staff’s (“Staff”) review is on new, modified, and/or expanded measures and programs proposed in TEP’s 2022-2023 EE Plan. Therefore, Staff did not conduct cost-benefit analyses for measures or programs previously approved by the Commission. For measures or programs in which Staff conducted a cost-benefit analysis, Staff performed its analysis in accordance with A.A.C. R14-2-2412(B), which requires that the Societal Test be used for determining cost effectiveness of DSM measures or programs. Under the Societal Test, for a program or measure to be considered cost-effective, the ratio of benefits to costs must be greater than one. Staff used this method to determine if a program or measure is cost-effective.

It is important to note that in cases where a measure is close to 1.0, Staff considers non-monetized benefits of a measure, such as avoided emissions or generation water savings because, although the value of these savings has not been determined, they are greater than zero. Staff’s practice is to include an adder of up to 0.10 to the benefit-cost ratio.¹

The table below shows the current Commission-approved programs included in TEP’s DSM Portfolio:

Residential Programs
Efficient Products Program
Electric Vehicles

¹ Staff Report filed April 27, 2017, in Docket No. E-01345A-15-0182.

Existing Homes
Limited Income Energy Efficiency
Multi-Family
Residential New Construction
Shade Tree
Non-Residential Programs
Commercial & Industrial Comprehensive Program
CNC Program
Schools Energy Efficiency Pilot Program
Small Business Direct Install & School Facilities Program
Combined Heat and Power Pilot Program*
Commercial and Industrial Demand Response Program
ARC Pilot Program
Behavioral Sector
Behavioral Comprehensive*
Home Energy Reports
Support Sector
Energy Codes and Standards Enhancement*
Consumer Education and Outreach*
Utility Improvement
Conservation Voltage Reduction*
Generation Improvements and Facilities Upgrades*

* TEP is not proposing any modifications to these programs. Therefore, Staff did not include discussion of these programs in its report.

A. RESIDENTIAL PROGRAMS

Efficient Products Program

Description

The Efficient Products Program is an existing program that has been in place since 2008. The program offers promotions and partnerships that support the purchase and installation of EE and load management products by residential and small commercial customers in TEP's service territory.

The Program is primarily marketed through mass-market channels (i.e., radio, newspaper, website, social media, etc.) or through educational and training partnerships with participating retailers. TEP will add new education and marketing tools to the pool pump program element including print and digital marketing as well as webpages.

Modification

TEP intends to suspend the Advanced Power Strips measure because it is not cost-effective at this time (benefit-cost ratio = 0.61). TEP will monitor and screen this measure in future EE

Plans to see if it can be brought back to cost effectiveness due to changes in TEP avoided costs, measure savings profiles, or reduced technology costs.

Staff Recommendation

Staff recommends that the Commission approve the removal of the Advanced Power Strips measure from the Efficient Products Program.

Existing Homes Program

Description

The Existing Homes Program has been in place since 2008. The Program, now marketed as the “Efficient Home Program,” is designed to encourage homeowners to increase the EE of their existing homes. The Program provides incentives for high-efficiency Heating, Ventilation, and Air Conditioning (“HVAC”) equipment and tune-ups; duct sealing; and smart thermostats to reduce annual energy consumption, enable load shifting, and lower peak demand.

Modifications

In 2022, all smart thermostats rebated through the Efficient Home Program will be demand response enabled. Customers will be encouraged to participate in TEP’s smart thermostat demand response program that will be offered as an element of the Load Management pilot.

In addition, TEP proposes to suspend the ENERGY STAR® heat pump water heater as a standalone EE measure in the Efficient Home Program and include it only in the Load Management Program with a focus on encouraging customers to use the load shifting value of the technology. TEP will look at this measure in future EE plans to see if it becomes cost-effective due to changes in costs or savings.

In response to customer needs for social distancing associated with the pandemic, TEP plans to offer a free “virtual checkup” home energy auditing service that provides similar benefits to an in-person audit. Mobile application technology will allow the customer to use the video camera feature on a phone or tablet to tour the property while an experienced energy auditor observes remotely, asks the customer questions, and makes recommendations for energy-saving improvements.

TEP proposes to add the following two new measures to the Efficient Home Program:

1. Custom Residential HVAC
 - TEP will consider residential applications of new space cooling and heating technologies and identify cost-effective settings in which emerging HVAC technologies can be deployed. TEP intends to review projects on a case-by-case basis. TEP will work with participating trade allies and customers

who apply for a custom residential HVAC incentive to determine if the technology can be replicated to offer cost-effective savings at scale, and TEP administrative time in reviewing projects will be prioritized based on this criterion.

- Incentives will be paid for qualifying projects based on estimated annual energy savings, with a maximum incentive cap of \$5,000/home, using the min/max model to pay up to 75 percent of the total project incremental cost for all customers and up to 85 percent of incremental cost for qualifying low to moderate income customers. In the case of an HVAC unit that is replacing an existing HVAC unit that has burned out (“replace on burnout”) and for new HVAC units that are being added to an existing home renovation project, the baseline unit against which savings will be measured is a new replacement HVAC system that meets current codes and standards (Seasonal Energy Efficiency Ratio [“SEER”] currently, a 14 SEER unit).

2. Attic Insulation and Air Scaling

- Adding attic insulation enables customers to better maintain desired temperatures throughout their homes, while also reducing air conditioning energy use and peak demand. Specifically, this new measure will incentivize customers to retrofit their homes with up to R43 insulation. TEP proposes to offer an incentive of up to 75 percent of the incremental cost for all residential customers and up to 85 percent for low to moderate income customers, using the min/max incentive model applied to the weighted average.

Staff Recommendations

Staff found Custom Residential HVAC to be cost-effective with a ratio of 2.01. Therefore, Staff recommends approval of Custom Residential HVAC as described herein.

Staff found Attic and Air Scaling to be cost-effective with a ratio of 1.71. Therefore, Staff recommends approval of Attic Insulation and Air Scaling as described herein.

Limited Income Energy Efficiency Program (Low-Income Weatherization Program)

Description

The Limited Income EE Program is an existing program most recently approved by the Commission in Decision No. 77085. Per-home expenditures were capped at \$6,000. In Decision No. 77085, the Commission authorized TEP to utilize additional agencies to those currently approved to assist in the delivery of the Program. In addition, Decision No. 78673 (August 22, 2022) increased the per-home spending cap from \$6,000 to \$10,000.

Modification

TEP proposes to change the name of the program from “Low-Income Weatherization” to “Limited Income Energy Efficiency” (“LIEE”) to better reflect TEP’s efforts to serve low-income customers by providing more services than just weatherization, such as customer education, virtual audits, and other measures and initiatives intended to help these customers save money, feel more comfortable in their homes, and recover from the pandemic-affected economy. Despite the name change, TEP plans to maintain all elements of the weatherization program measure list.

Staff Recommendation

Staff recommends approval of the Program’s name change as described above as this modification does not impact the cost effectiveness.

Multi-Family Program

Description

The Multi-Family program is an existing program approved by the Commission in Decision No. 77085. The Program is designed to encourage property managers and customers living in multi-family housing to install devices that provide energy and demand savings, and to work with property managers to improve the overall efficiency of multi-family properties. The Program is available to multi-family properties with buildings consisting of five or more connecting residential units. Qualifying properties could include rentals and/or owner-occupied properties. The program encourages multi-family properties to install more efficient lighting, smart thermostats, and low-flow water devices. The Program also offers HVAC tune-up measures, Western Cooling Controls, and Duct Testing and Repair. Additionally, multi-family facility managers are encouraged to participate in the C&I Facilities Program, which promotes DSM measure installation in common areas. For existing measures, TEP offers incentives of up to 50 percent of incremental cost.

Modifications

TEP proposes to offer a new comprehensive whole building custom measure for multi-family properties. This custom comprehensive measure will cover the bundling of previously approved EE measures with other efficiency improvements into a single energy saving combination to be paid on a per kWh basis. In a manner similar to the method used to deliver the package of weatherization measures for low-income customers, this new measure will enable an implementation contractor to install as many measures as appropriate to the individual structures. TEP proposes to pay an incentive up to 75 percent of incremental project costs, pursuant to Decision No. 78673. For qualifying multi-family projects that serve low to moderate income customers, TEP proposes to offer incentives of up to 85 percent of incremental project costs. To qualify for custom whole building incentives, projects must be submitted with detailed energy simulation modeling showing estimated annual savings. TEP will work with the program

implementation contractor to ensure that projects are cost-effective before custom incentives are approved for payment.

Staff Recommendations

Staff found the modifications to the Multi-Family Program to be cost-effective with a ratio of 2.77. Therefore, Staff recommends approval of the modifications to the Multi-Family program as described herein.

Residential New Construction Program

Description

The Residential New Construction program, marketed as the “Energy Smart Homes” program, is an existing program most recently approved by the Commission in Decision No. 77085. The program provides an incentive to homebuilders to install EE and load management measures that help achieve a Home Energy Rating System (“HERS”) Index score of 65 or lower for a newly constructed home, as determined by the ENERGY STAR® Certified Homes Program requirements or equivalent. Newly constructed single-family and multi-family homes in the TEP service territory are currently eligible to participate in the program.

This program will continue to be available to all qualifying properties; however, TEP targets multi-family properties that serve the limited to moderate income market. TEP believes that this segment of multi-family customers can be difficult to serve since it falls outside the federal program guidelines, and the newly proposed custom comprehensive whole building measure creates a more effective means of supporting the installation of energy and demand savings measures in buildings occupied by these customers.

Modifications

TEP proposes to modify the Program's eligibility criteria to also include manufactured homes in the program that meet the requirements of the ENERGY STAR® Manufactured Homes program and are certified ENERGY STAR® or achieve equivalent performance. TEP proposes to simplify the program to require ENERGY STAR® certification only (or equivalent savings levels), without a specific HERS rating requirement. Certified ENERGY STAR® or equivalent manufactured homes will be eligible to receive the same incentives as all other participating homes. TEP proposes to provide bonus incentives to sales consultants who sell ENERGY STAR® certified manufactured homes. These bonus incentives would be offered on a per home sale basis with a sliding scale of between \$25 to \$100 depending upon program participation and market conditions.

In addition, TEP proposes two new load management measures that will proactively deliver better load shapes by installing them at the time of construction. The Company will also offer a new prescriptive compliance path for Multi-Family New Construction.

1. Connected Smart Thermostats

This energy management technology facilitates EE savings and load shifting through both programmed settings and via utility signals for demand response. The units were recently approved for use in TEP's 2018 Residential Load Management Pilot program in Decision No. 77085. TEP will offer a builder incentive of up to 75 percent of the incremental cost per thermostat.

2. New Prescriptive Compliance Path for Multi-Family New Construction Projects

Multi-Family builders who opt to participate using the prescriptive path must meet each individual prescriptive specification to earn an incentive. The prescriptive path has been designed to achieve equivalent energy savings that would result from a project that opted to participate in the performance path. TEP proposes to modify the incentives for new single family and multi-family homes from a single overall Energy Smart Home incentive to a performance-based scale totaling no more than \$300/home with the following list of incentives:

1. *Energy Smart Home*: \$200/dwelling unit (using Performance or Prescriptive Path.)
2. *Connected Smart Thermostats*: up to 75 percent of the incremental cost per thermostat.
3. *Connected electric resistance water heaters*: up to 75 percent of the incremental cost per water heater.
4. The Company will also work through the Load Management Pilot to identify participating home builders interested in incorporating connected electric water heating as a load shifting measure into new construction by offering up to 75 percent of the incremental cost per connected electric resistance or heat pump water heater.
5. The Company will also work through the Beneficial Electrification Initiative to find home builders interested in installing induction cooktops.

Staff Recommendations

Staff recommends approval of the revised incentive levels for the New Prescriptive Compliance Path as this does not impact cost effectiveness.

Staff recommends approval of the eligibility criteria modifications to the Residential New Construction Program as described above as this modification does not impact the cost effectiveness.

Shade Tree

Description

The Shade Tree Program is an existing program that was most recently approved by the Commission in Decision No. 77085. The Shade Tree Program, currently marketed under the name “Trees for You,” provides desert adapted trees to TEP customers. As currently approved, the program runs from September through May. Delivery is currently suspended during the summer months (June to August), because of the low survival rate for trees planted during the summer heat. The trees are offered at reduced prices. The fee per 15-gallon tree for non-residential customers is \$25; the fee per five-gallon tree for non-residential customers is \$10; and the fee per five-gallon tree for residential customers is \$5.

Modification

The Program currently limits customers to three five-gallon trees per year. TEP requests a slight modification to specify the program may limit customers to three five-gallon trees or less per year. This change will give the company greater flexibility to accommodate varying levels of customer demand for trees and help ensure the ability for more customers to participate within the Program’s budget.

Staff Recommendation

Staff recommends approval of the proposed modification to the Shade Tree program as the modification does not impact cost effectiveness.

B. NON-RESIDENTIAL PROGRAMS

Commercial & Industrial Comprehensive Program

Description

The C&I Comprehensive Program, currently marketed as the “EasySave Plus” program, is an existing program which has been offered since 2008 and most recently approved by the Commission in Decision No. 77085. The program provides incentives to TEP’s non-residential customers for the installation of DSM measures in existing facilities. The program currently offers incentives up to a maximum of 50 percent of incremental cost for the installation of high efficiency HVAC, lighting, refrigeration equipment and controls, motors and motor drives, plug load equipment, as well as many other high-efficiency measures. Customers may elect to participate in the CNC Program by applying directly to TEP or through an installation contractor.

Modifications

TEP proposes to continue the C&I Comprehensive Program in 2022 with the following modifications to reduce program overhead costs and improve cost effectiveness: 1) TEP proposes to incorporate the existing Small Business Direct Install and School Facilities program and the CNC Program into the C&I Comprehensive Program; 2) TEP proposes to adjust the range of incentive levels to up to as much as 75 percent of incremental cost for large and medium size customers and 85 percent of incremental costs for small businesses, schools, and nonprofits; and 3) TEP requests to incorporate the min/max model into the custom measure calculation and set the incentive range to \$0.06 to \$0.10 per kWh saved. These updates will give TEP the ability to adjust incentives up or down based on market conditions, savings goals, and rate class.

As approved in Decision No. 77085, for any individual project, incentives are limited to a cap of \$600,000 per year. Any additional projects for the same customer in the same year are eligible for up to 50 percent of standard incentive amounts. For 2022, TEP asks to modify this guidance for the incentive cap to further specify that within the above-mentioned parameters, no single customer will be eligible to receive more than 25 percent of a program's total annual incentive budget. TEP intends to offer higher incentive levels for deemed and custom measures installed at qualifying school facilities, nonprofits, and small businesses within the C&I Comprehensive Program to accommodate the special needs of these customers. In addition, in response to Chairwoman Márquez Peterson's letter on February 19, 2020, TEP also proposes to offer these higher incentive levels to encourage efficiency improvements for qualifying historic and cultural facilities.

Further, TEP proposes to launch a new Prescriptive Express Initiative that will reduce the time, effort, and money necessary for both contractors and small businesses to participate in TEP's efficiency programs. Qualifying EE projects with prescriptive measures totaling less than \$10,000 would be able to participate and would require less documentation and information on application forms, thereby lowering the hurdle for program participation. To further encourage participation in this initiative, TEP proposes to offer bonus incentives up to \$100 per project to contractors who complete qualifying new projects for targeted small businesses and nonprofits.

TEP intends to maintain the CNC Program parameters as approved by the Commission in Decision No. 77085 with the following exception: customers served under the Commercial New Construction program element will no longer be held to the previous \$75,000 per project limit and will instead be subject to the newly proposed incentive caps for all C&I customers as discussed above.

The Company proposes to offer the following three new measures:

Ductless Mini-Split Heat Pumps

TEP proposes to introduce new incentives for non-residential customers to install high efficiency ductless mini-split heat pumps which are well-suited to facilities without existing ductwork or central HVAC systems. Because they are available up to a SEER of

25, they are more efficient for cooling and heating compared to window or in-room AC units and electric resistance heating. For qualifying business customers installing new high efficiency ductless mini-split heat pumps that exceed the baseline standard of SEER 14, TEP plans to provide incentives of up to 75 percent of total incremental cost difference between the proposed EE measure and less efficient baseline measure for large and medium-size customers and up to 85 percent of incremental cost for small businesses, schools, and nonprofits.

Indoor Agriculture Dehumidifiers

Indoor growing facilities must maintain appropriate temperatures, airflow, and absolute humidity levels. Plants produce water vapor as they grow, creating a constant need for dehumidification indoors. Because of the near constant run times of dehumidifiers, high efficiency ENERGY STAR® models provide sizeable savings over less efficient versions. TEP proposes to incentivize the use of such high efficiency models and provide incentives of up to 75 percent of measure incremental cost difference between the proposed EE measure and less efficient baseline measure for large and medium-size customers and up to 85 percent of incremental cost for small businesses.

LED Panels

TEP proposes to offer incentives for customers who replace existing T8 linear fluorescents and ballasts with panels. These replacement panels are more efficient, have a longer measure life, lower maintenance costs, and other environmental benefits including eliminating mercury and other toxic materials. TEP plans to provide incentives of up to 75 percent of measure incremental cost difference between the proposed EE measure and less efficient baseline measure for large and medium-size customers and up to 85 percent of incremental cost for small businesses.

Staff Recommendations

Staff recommends approval of the proposed modifications to the C&I Comprehensive Program administration and incentive levels as these modifications do not impact cost effectiveness.

Staff calculated the benefit-cost ratio of the Ductless Mini-Split Heat Pump measure to be 1.43. Therefore, Staff recommends approval of the Ductless Mini-Split Heat Pump measure as discussed herein.

Staff calculated the benefit-cost ratio of the Indoor Agriculture Dehumidifier measure to be 2.29. Therefore, Staff recommends approval of the Indoor Agriculture Dehumidifier measure as discussed herein.

Staff calculated the benefit-cost ratio of the LED Panel measure to be 1.94. Therefore, Staff recommends approval of the LED Panel measure as discussed herein.

Commercial New Construction Program

Description

The CNC Program is an existing program most recently approved by the Commission in Decision No. 77085. The CNC Program is designed to promote EE and load management in new commercial facilities. Customers may elect to participate in the CNC Program by applying directly to TEP or through an installation contractor. In addition, the CNC Program provides technical support and consumer education regarding available EE design options for new commercial construction. TEP currently pays incentives to the building owners or developers at \$0.06 per kWh for building energy use reduction in kWh during the first year of building operation up to a maximum of 50 percent of the incremental cost of EE equipment, construction, or design over the baseline equipment, construction, or design cost necessary to meet the local building codes. Each project has a not-to-exceed incentive cap of \$75,000. Moreover, all incentives for customers received through any TEP offering are subject to the cap approved in Decision No. 77085, specifying that incentives any C&I customer may receive on an annual basis be limited to no more than \$600,000, plus 50 percent of any remaining eligible incentive amount.

Modifications

TEP proposes that the CNC Program be incorporated into the C&I Comprehensive Program while keeping the same program parameters to continue as approved in Decision No. 77085, except for the following proposed modification: CNC Program eligibility requirements will be simplified so participating customers will no longer be held to two different incentive caps; the previous \$75,000 per project limit will be removed, while maintaining the current cap of \$600,000 per year, as approved in Decision No. 77085; participants would also be subject to the newly proposed incentive cap specifying that no individual C&I customer may be eligible to receive more than 25 percent of a program's annual incentive budget.

Staff Recommendation

Staff recommends approval of the proposed modifications to the CNC Program as these modifications do not impact cost effectiveness.

Schools Energy Efficiency Pilot Program

Description

The Schools Energy Efficiency ("SEE") Pilot Program is an existing program approved by the Commission in Decision No. 75450 (February 11, 2016). It offers incentives for DSM measures in existing K-12 schools that cannot raise the necessary capital to participate in the current TEP non-residential program. The program provides incentives at 100 percent of the project cost for the installation of DSM measures including: lighting equipment and controls, HVAC equipment, motors and motor drives, refrigeration, and custom measures. The SEE program has a cap of \$150,000 per public school district or charter school.

Modifications

TEP proposes the following modifications to the program, given that this program has been successfully operating since 2016. TEP proposes to formalize this program and eliminate the word "Pilot" to recognize its formal status as an approved program. TEP intends to operate the SEE Program with an annual budget of \$1,000,000 in 2022 in accordance with Decision No. 77085. Pursuant to Decision No. 78673, the per-school district maximum incentive of \$150,000 may be waived and a \$100,000 maximum per school was added. In addition, Decision No. 78673 provided TEP flexibility to increase the SEE Program budget.

Staff Recommendations

Staff recommends approval of the SEE Program as a formal program.

Small Business Direct Install and School Facilities Program

Description

The Small Business Direct Install and School Facilities Program, marketed as the "EasySave Program," is an existing program most recently approved by the Commission in Decision No. 77085. The program is open to participation by all small non-residential customers and all K-12 schools in the TEP service territory. The program provides incentives for retrofit and replace-on-burnout DSM measures in existing small businesses, including high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures. To respond to market trends for all approved measures within this program, TEP uses a min/max incentive model that currently pays incentives of up to 50 percent of incremental costs, which is defined as the installed cost of an EE measure over the installed cost of a less efficient baseline unit that would otherwise have been installed in absence of incentives. TEP currently uses the min/max model to pay incentives of \$0.06 per kWh saved for all lighting measures during the first year of equipment operation.

Modifications

TEP proposes that the Small Business Direct Install and School Facilities Program be incorporated into the C&I Comprehensive Program in 2022.

Staff Recommendations

Staff recommends approval of inclusion of the Small Business Direct Install and School Facilities Program as part of TEP's C&I Comprehensive Program as this does not impact cost effectiveness.

Commercial and Industrial Demand Response Program

Description

The C&I Demand Response Program, also known as C&I Direct Load Control ("DLC") or Direct Load Response Program and marketed as "TEP DemandSmart," is an existing program approved by the Commission in Decision No. 71787 (July 12, 2010). The program is designed to manage peak demand and mitigate system emergencies through C&I load curtailment. The program provides up to 40 MW of summer peak demand reduction and is available for up to 80 hours per customer per year, with a typical load control event lasting three to four hours. Customers are compensated with incentives for their participation at negotiated levels depending on multiple factors, including the size of the facility, amount of kilowatt ("kW") under load control, and the frequency with which the resource can be utilized. Some customers only participate in emergency load control events at a reduced incentive level. In the 2018 Plan, TEP shifted the administration of this program to in-house personnel to improve cost-effectiveness, as approved in Decision No. 77085.

Modification

The Company proposes to modify this program to clarify that participating non-residential customers must be able to provide a minimum of at least 100 kW of load reduction when called upon.

Staff Recommendation

Staff recommends approval of the proposed modification to the C&I Demand Response Program as this does not impact cost effectiveness.

Advanced Rooftop Control

Description

TEP proposes to offer a new ARC Pilot that is designed to manage energy use and maximize EE while increasing fresh air ventilation by providing incentives for high efficiency air handling equipment paired with outside air economizers, carbon dioxide sensors, and energy management systems to automatically control equipment and thermostats. The ARC pilot is limited to public, private, and charter K-12 schools, and nonprofit organizations with a 501(C)(3) designation.

Staff Recommendations

Staff calculated the benefit-cost ratio of the proposed ARC Pilot Program to be 1.67. Therefore, Staff recommends approval of the ARC Pilot Program.

C. BEHAVIORAL SECTOR

Home Energy Reports

Description

The Home Energy Reports Program is an existing program that was most recently approved by the Commission in Decision No. 77085. The program is designed to promote behaviors that conserve energy or manage load, such as turning off lights or appliances, adjusting thermostat set points, and performing regular equipment maintenance.

Modifications

TEP intends to offer improved mobile capabilities and to add more data analytics capabilities that enable more personalized energy guidance and recommendations for participants, including mid-month alerts that tell customers about their current usage with forecasts for the remainder of the month, as well as other messaging to help customers better understand their individual usage patterns and actions they can take to reduce and shift energy use to save on home energy costs. Additionally, TEP intends to explore incorporating new technologies such as personal digital assistants like Google Assistant and Amazon Alexa to deliver energy savings tips and behavioral EE messaging and assist customers with impairments or limited mobility.

Staff Recommendations

Staff recommends approval of the proposed modifications to the Home Energy Reports Program as the modifications do not impact cost effectiveness.

D. DSM INITIATIVES

Load Management Pilot Program

Description

TEP states that it is submitting a new Residential Load Management Pilot Program that incorporates Feeder Level Energy Storage, Residential Thermal Storage, and Residential Demand Response in accordance with Decision No. 75975 (February 24, 2017). This Pilot was initially approved by the Commission in Decision No. 77085 (February 20, 2019), and TEP is currently working to implement the Pilot. TEP proposes to implement the following:

1. *Feeder Level Energy Storage* - Feeder-level battery storage that is utilized to reduce system peak, provide feeder congestion relief, and support local power quality on selected distribution feeders.
2. *Thermal Storage* - Connected heat pump water heaters and connected water heater controls that can be retrofitted on existing water heaters will be used to storage

thermal energy to reduce system peak demand, provide on-peak bill savings for participating customers, and help integrate midday solar energy onto the grid.

3. *Demand Response with Connected Smart Thermostats* - Connected smart thermostats will be used to manage participants' air conditioners or heat pumps/heating by adjusting thermostat settings during peak demand events. TEP will offer customers an initial annual incentive of \$40 for participating in Demand Response, with flexibility to adjust the incentive level up to \$80 and offer other special promotions using a min/max model if needed to drive participation.

TEP proposes to expand the Load Management Pilot to also serve non-residential customers.

Modifications

TEP intends to maintain the currently approved program elements, while also expanding the program as follows in accordance with Decision No. 75975, and in alignment with Decision No. 76313 regarding Arizona Public Service Company: 1) TEP proposes to expand the Load Management Pilot to also serve non-residential customers; and 2) to streamline administration and operations, TEP also proposes to incorporate the TEP Customer-Sited Energy Storage Pilot ("CESP") filed in Docket E-01933A-19-0149 into the Load Management Pilot. The CESP is consistent with the Load Management Pilot objectives. TEP has incorporated the proposed budget for the CESP into the Load Management Pilot budget in 2022-2023 and proposes to retain all elements of the CESP program design as proposed in the original pilot filing. If the CESP is not approved for inclusion within the Load Management Pilot, TEP will allocate those funds to other load management measures within the Pilot.

In addition, TEP proposes to further explore opportunities for energy storage and load management by offering four new pilot measures. The 2022-2023 Plan carries forward unchanged the Company's request for rate optimized thermostats and connected pool pumps from 2021 and it includes modifications to the previous requests for customer-sited batteries and thermal storage to help integrate the CESP into the Load Management Pilot.

Rate Optimized Smart Thermostats

TEP proposes to offer smart thermostats that are optimized to work with TEP's Time-of-Use ("TOU") and demand-based tariffs by automatically adjusting thermostat operation to reduce on-peak demand and shift customer energy use into pre- and post-peak periods. The Company proposes to offer rate optimized smart thermostats at no cost to eligible residential customers in owner occupied and rental single-family and multi-family dwellings. TEP proposes to include this measure in the Load Management Pilot and co-promote it to residential customers through the Existing Homes, Multi-family, LIEE, and Behavioral Comprehensive programs.

Connected Pool Pump Controls

TEP is proposing a new pilot measure for connected pool pump controls for customers to run their pool pumps exclusively during off-peak times, and to remotely monitor and control pumps. TEP proposes to offer customers a \$30 incentive to encourage adoption of both new and retrofit connected controls, and to promote this pilot measure to residential customers primarily through the pool component of the Efficient Products Program.

HVAC Thermal Storage

For non-residential customers, TEP proposes to pilot the installation and operation of HVAC thermal storage units that shift HVAC cooling load to off-peak hours. These units serve as thermal batteries by making ice or chilled water during off-peak hours and then using that ice during on-peak periods in an ice-cooled evaporator coil to chill the air supply of the customer's air conditioner. Bi-directional Wi-Fi communication enables remote customer control and utility dispatch for demand response and other changes to the unit's charge and discharge settings. Energy efficient thermal storage for commercial customers will be incentivized at between \$400/kW to \$800/kW for systems of up to 75 kW. Qualifying commercial customers must be on a TEP TOU or demand rate plan and must install new equipment capable of shifting 20 kW or more during the entire on-peak period. Due to the nature of load shifting ordered by these units, eligibility requirements will preclude participation in this measure by customers who elect to participate in the residential battery storage measure discussed above.

Customer-Sited Batteries

For non-residential customers, TEP proposes to support the installation and operation of customer-sited battery storage systems that enable customers on TOU and demand rates to more effectively manage electric consumption, reduce peak demand, absorb midday solar production, and provide backup power in case of an outage. Battery storage for commercial customers will be incentivized at between \$400/kW to \$800/kW for systems of up to 75 kW. Qualifying commercial customers must be on a TEP TOU or demand rate plan and must install new equipment capable of shifting 20 kW or more during the entire on-peak period. Due to the nature of load shifting offered by these units, eligibility requirements will preclude participation in this measure by customers who elect to participate in the HVAC thermal storage measure discussed above.

Connected Electric Water Heaters

TEP proposes to add a new connected electric water heating pilot measure that provides incentives for residential customers and homebuilders to install connected electric water heaters that offer capabilities for energy savings, load shifting, and participation in utility demand response programs. Qualifying water heaters must have a connected communication module that allows for remote monitoring and control. Using the min/max incentive model applied to the weighted average based on the total incremental cost of the added bidirectional communications capability in the water heater, TEP plans to provide incentives of up to 75 percent of total incremental cost difference between qualifying connected electric water heaters and standard electric water heaters

without connected communications for residential customers and large and medium-size non-residential customers and up to 85 percent of incremental cost for low-income customers, small businesses, schools, and nonprofits. TEP proposes to leverage home developer contacts through the Residential New Construction Program to offer builders incentives install this pilot measure in their new homes.

Connected Water Heater Controls

TEP proposes to offer connected water heater controls as retrofits for existing water heaters. The new retrofit control devices will be installed on existing electric water heaters and programmed to align with TEP TOU or TOU with demand rates to automatically shift load to off-peak periods. The units will pre-heat water before on-peak time periods to reduce customer bills and save peak demand. Using the min/max incentive model applied to the weighted average based on the total incremental cost of the added bidirectional communications capability in the retrofit device, TEP plans to provide incentives of up to 75 percent of total incremental cost of a qualifying connected controller for residential customers and large and medium-size non-residential customers and up to 85 percent of incremental cost for low-income customers, small businesses, schools, and nonprofits.

Staff Recommendation

Staff recommends approval of the proposed expansion of the Load Management Pilot Program and the incorporation of the Customer-Sited Energy Storage Pilot as described herein.

Staff calculated the benefit-cost ratio of the Rate Optimized Smart Thermostat measure to be 2.02. Therefore, Staff recommends approval of the proposed Rate Optimized Smart Thermostat measure.

Staff calculated the benefit-cost ratio of the Connected Pool Pump Controls measure to be 1.94. Therefore, Staff recommends approval of the proposed Connected Pool Pump Controls measure.

Staff calculated the benefit-cost ratio of the HVAC Thermal Storage measure to be 0.27. Therefore, Staff does not recommend approval of the proposed HVAC Thermal Storage measure.

Staff calculated the benefit-cost ratio of the Customer-Sited Batteries measure to be 0.40. Therefore, Staff does not recommend approval of the proposed Customer-Sited Batteries measure.

Staff calculated the benefit-cost ratio of the Connected Electric Water Heaters measure to be 0.06. Therefore, Staff does not recommend approval of the proposed Connected Electric Water Heater measure.

Staff calculated the benefit-cost of the Connected Water Heater Control measure ratio to be 0.47. Therefore, Staff does not recommend approval of the proposed Connected Water Heater Control measure.

Beneficial Electrification Pilot Program

TEP proposes to offer new beneficial electrification measures to non-residential customers through the C&I Comprehensive and New Construction Program. These measures are described in more detail below.

Electric Forklifts

Description

Electric Forklifts are used primarily for lifting and moving loads. They are most often found in facilities such as warehouses and shipping depots. TEP proposes to pay an initial incentive of \$1,250 per unit for a qualifying new electric forklift or for converting a forklift with an internal combustion engine with a maximum of \$50,000 per customer meter.

Staff Recommendation

Staff calculated the benefit-cost ratio of the Electric Forklift measure to be 0.69. Therefore, Staff does not recommend approval of the proposed Electric Forklifts measure.

Standby Truck Refrigeration

Description

Electric standby truck refrigeration units offer the ability for trucks to use electricity to operate equipment in the truck cab and maintain temperatures in both the cab and in the trailer while loading and unloading cargo at a distribution center. Eliminating truck engine idling time saves energy and reduces overall fuel costs, while also lowering emissions, and creating healthier, safer, and quieter workspaces. TEP proposes to pay an initial incentive of \$750 per unit for a qualifying newly installed electrification station, with a maximum of \$50,000 per customer meter.

Staff Recommendation

Staff calculated the benefit-cost ratio of the Standby Truck Refrigeration measure to be 2.54. Therefore, Staff recommends approval of the proposed Standby Truck Refrigeration measure.

Electric Ground Support Equipment

Description

Ground support vehicles including belt loaders, tow tugs, and pushback tugs are designed for moving heavy objects such as planes, and for loading, unloading and transporting baggage and packages. All three types of vehicles typically rely on gasoline powered internal combustion engines. Shifting these vehicles to an electric power supply creates the opportunity to save energy, reduce operating and maintenance expense, lower fuel costs, decrease emissions, and improve

worker health and safety while also providing energy storage and other grid benefits. TEP proposes to pay an initial per unit incentive of \$1,100 per belt loader, \$2,500 per tow tug, and \$5,000 per push tug, with a maximum of \$50,000 per customer meter per year.

Staff Recommendation

Staff calculated the benefit-cost ratio of the Electric Belt Loader measure to be 0.75. Therefore, Staff does not recommend approval of the proposed Electric Belt Loader measure.

Staff calculated the benefit-cost ratio of the Tow Tug measure to be 2.09. Therefore, Staff recommends approval of the proposed Standby Tow Tug measure.

Staff calculated the benefit-cost ratio of the Pushback Tug measure to be 1.59. Therefore, Staff recommends approval of the proposed Standby Pushback Tug measure.

Induction Cooktop

Description

Induction cooking is a highly energy-efficient technology that uses magnetic currents to directly heat cookware, unlike most stoves that indirectly heat the cookware by first heating the electric cooktop surface. This efficiency means that induction cooktops can heat foods and liquids up to 50 percent faster than electric or gas cooktops. In addition to saving energy directly, the technology also offers significant indirect energy savings by reducing the amount of waste heat it adds into homes, requiring less fan run time for cooking area ventilation and lowering HVAC costs. TEP proposes to leverage home developer contacts through the Residential New Construction Program to offer builders incentives of \$200 per induction cooktop to install this pilot measure in their new homes.

Staff Recommendation

Staff calculated the benefit-cost ratio of the Induction Cooktop measure to be 0.22. Therefore, Staff does not recommend approval of the proposed Induction Cooktop measure.

Innovative Customer Solutions

Description

TEP is proposing the Innovative Customer Solutions (“ICS”) pilot framework for exploring technology innovation and assessing customer value in a limited real-world testing environment that enables the Company to ascertain viability prior to seeking Commission approval for larger scale initiatives. The ICS framework will allow TEP to collaborate with stakeholders to conceive new proof-of-concept initiatives, and rapidly test combinations of technologies, customer communication and education, financing, and data analysis to determine which provide the most value to customers.

The new framework will address multiple objectives, including:

1. Enable a proactive review of emerging technologies that have the potential to affect our grid and customer base.
2. Provide a structure for testing and developing new offerings to assist customers who may be underserved by existing programs.
3. Gather feedback from customers about their motivations, drivers, preferences, and other elements of their experiences, including the value and benefits they receive from participating, and the likelihood to recommend to others and/or participate in the future.
4. Obtain valuable insights into customer use cases and new business models, as well as the benefits associated with the technologies, rates, and other attributes of the initiative under investigation.
5. Gain knowledge and understanding of how to safely and more effectively connect, communicate and dispatch distributed energy technologies with high levels of reliability.
6. Facilitate the ability to rapidly perform controlled experiments and evaluations outside of the more time-consuming process of a typical DSM filing cycle.
7. Lower risk of scaling DSM programs by conducting appropriate due diligence for proposed programs/products/services, under controlled conditions, prior to rollout to a larger cohort. By meeting these objectives, the framework will provide significant ratepayer benefits since it enables TEP to better refine and identify products, programs, and services that benefit a wider majority of our customers.

TEP proposes that up to a maximum of seven percent of annual DSM spending could be allocated to this proposed experimentation framework. TEP believes this will enable the Company to have the flexibility to better leverage future DSM dollars collected by proactively identifying products, services, and programs that provide the most overall value to our customer base.

TEP proposes to accomplish the program objectives through applied research and small-scale pilots. Such efforts will have different research designs and target different customer demographics, psychographics, and regions of TEP's territory depending on the customer issue being addressed. Such combinations may include technology assessments and comparisons, targeted customer engagement program studies, new service offerings at the commercial level, and/or recombining previously defined measures and rates into new offerings. TEP will convene a collaborative group to discuss potential pilot initiatives including:

Mobile/Manufactured Home Weatherization

This micro-pilot targets mobile home communities where TEP can work on a new approach to weatherize all the homes within the community at the same time to improve cost effectiveness, increase EE and ensure they have functioning HVAC equipment. This micro-pilot would be specifically targeted to reach low to moderate-income customers who are between 200 percent of federal poverty level (above the level that can qualify for limited income weatherization assistance) and below 80 percent of the regional adjusted median income.

Connected Communities

This micro-pilot targets multifamily communities that serve low to moderate income customers and offers connected devices as well as community Wi-Fi to support voice-activated digital assistants, home energy management systems and energy monitoring devices that can provide customers with real-time feedback about their home's energy use and ways to save energy and reduce costs. Participating customers could enroll in TEP's TOU or demand rates and allow TEP to manage their devices and/or send them real time messages to help shift load to off-peak times and reduce energy costs.

Shared Community Storage

This micro-pilot would enable small businesses, nonprofits, and residential customers to pay for "shares" of utility scale community energy storage to offset their monthly electric demand. The effort would be targeted at customers who would not otherwise be able to benefit from an energy storage system due to financial constraints because they are renters or other limitations. The actual battery storage devices could be sited in locations appropriate to support grid functionality and resiliency. In addition to stationary battery systems, the effort could also support shared community Vehicle to Grid ("V2G") charging, storage, and discharging.

Staff Recommendation

Staff recommends approval of TEP's proposed Innovative Customer Solutions. In addition, Staff recommends that TEP include any energy and peak-capacity savings in its annual DSM Reports.

E. PORTFOLIO MANAGEMENT

TEP serves as the program administrator for the DSM portfolio. TEP provides comprehensive program administrative, contract management, strategic planning, and program oversight functions including financial planning and budgeting. TEP has a dedicated team of DSM and Customer Solutions program staff that perform these functions for the Company.

SUSPENDED COMMERCIAL INITIATIVES

TEP proposes to discontinue offering the following measures as the Company no longer finds them cost effective.

Program	Measure
Electric Vehicles	Electric Vehicles
Efficient Products	Advanced Power Strip
C&I Comprehensive	Advanced Power Strip
	Anti-Sweat Heater Controls
	Commercial Kitchen Exhaust Fan
	Energy Efficient Exit Sign
	Energy Efficient TEFC Motors
	Evaporative Fan Controls
	Green Motor Rewind
	VSD Automated Drain Trap Compressor
	Variable Refrigerant Flow
	Window Films

Electric Vehicles

TEP's EV Pilot program was proposed in the Company's 2018 DSM Plan and approved by the Commission in Decision No. 77085 (February 20, 2019). The Company states it has shifted its previously approved budget for its EV efforts out of the EV program and into other DSM programs. TEP intends to continue its EV efforts outside of its DSM plan, as described in the Company's EV Policy Implementation Plan.²

REQUEST FOR WAIVER

A.A.C. R14-2-2404(B) sets forth the EE standard for 2020 at 22 percent. TEP states that at the end of 2020, the Company achieved cumulative savings of 1,779,778 MWh, which represents 21.83 percent cumulative annual energy savings as a percent of retail sales and forecasts that by the end of 2022, TEP will achieve total cumulative savings of 2,059,878 MWh, which represents 24.38 percent of adjusted retail sales.

Staff notes that the Commission previously approved a waiver of A.A.C. R14-2-2404(B) for TEP in Decision No. 77085 (February 20, 2019). Despite the Commission's previous waiver of A.A.C. R14-2-2404(B), Staff notes that the Company plans to attain 24.38 percent of adjusted retail sales by the end of 2022. Therefore, Staff does not believe a waiver is necessary with respect to A.A.C. R14-2-2404(B), at this time.

² The Commission opened Docket No. E-00000A-21-0104 to address EV Policy Implementation Plans.

2022-2023 ENERGY EFFICIENCY PLAN BUDGET BY PROGRAM

Program	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Measurement, Evaluation and Research	Total Budget
Residential Sector						
Limited-Income Energy Efficiency	\$714,876	\$217,492	\$15,119	\$20,159	\$40,319	\$1,007,966
Multi-Family	\$495,942	\$511,301	\$1,267	\$100,262	\$42,032	\$1,150,804
Residential New Construction	\$808,517	\$64,659	\$37,104	\$39,577	\$39,577	\$989,435
Shade Trees	\$229,353	\$1	\$207	\$0	\$4,685	\$234,245
Existing Homes	\$2,129,576	\$1,164,086	\$27,366	\$34,958	\$139,833	\$3,495,820
Efficient Products	\$797,141	\$822,849	\$143,896	\$18,567	\$74,269	\$1,856,723
Subtotal	\$5,175,406	\$2,780,388	\$224,959	\$213,524	\$340,715	\$8,734,993
Non-Residential Sector						
C & I Comprehensive	\$3,869,499	\$1,284,827	\$109,608	\$41,103	\$175,373	\$5,480,410
Commercial DLC	\$330,757	\$96,392	\$15,000	\$7,851	\$50,000	\$500,000
Commercial Schools	\$827,780	\$133,223	\$0	\$0	\$40,042	\$1,001,045
Subtotal	\$5,028,036	\$1,514,441	\$124,608	\$48,954	\$265,415	\$6,981,455
Behavioral Sector						
Home Energy Reports	\$81,450	\$471,909	\$12,030	\$12,030	\$24,059	\$601,477
Behavioral Comprehensive	\$349,989	\$203,690	\$12,055	\$5,955	\$23,820	\$595,509
Subtotal	\$431,439	\$675,599	\$24,085	\$17,985	\$47,879	\$1,196,986
DSM Initiatives Sector						
Beneficial Electrification Pilot Program	\$30,000	\$168,000	\$15,000	\$3,000	\$84,000	\$300,000
Load Management Pilot Program	\$270,000	\$1,512,000	\$135,000	\$27,000	\$756,000	\$2,700,000
Customer Solutions Framework	\$150,000	\$840,000	\$75,000	\$15,000	\$420,000	\$1,500,000
Subtotal	\$450,000	\$2,520,000	\$225,000	\$45,000	\$1,260,000	\$4,500,000
Advanced Rooftop Control						
Advanced Rooftop Control	\$607,949	\$185,000	\$25,000	\$5,000	\$0	\$822,949
Subtotal	\$607,949	\$185,000	\$25,000	\$5,000	\$0.00	\$822,949

Program	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Measurement, Evaluation and Research	Total Budget
Support Sector						
Education & Outreach	\$0	\$54,340	\$408,422	\$37,239	\$0	\$500,000
Energy Codes and Standards	\$0	\$24,312	\$0	\$0	\$688	\$25,000
Generation Improvement & Facility Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
Research & Development	\$0	\$26,361	\$0	\$238,384	\$735,255	\$1,000,000
Subtotal	\$0	\$105,013	\$408,422	\$275,622	\$735,943	\$1,525,000
Portfolio Total	\$11,692,830	\$7,780,441	\$1,032,074	\$606,085	\$2,649,952	\$23,761,382
Percent Cost by Category	49.21%	32.74%	4.34%	2.55%	11.15%	100.00%

Staff notes that TEP's approved 2018 budget totaled \$22,916,762. TEP's proposed budget seeks \$23,761,382 for 2022 and 2023, which represents an increase of \$844,621. This increase includes \$822,949 for the ARC Program with the remaining \$21,672 being for various program costs.

Although Staff is not recommending approval of several measures, the individual budgets for these measures were not detailed by TEP. Therefore, Staff was not able to remove the individual measure budgets from the total program/sector budgets.

The table below shows the 2018 approved budget, TEP's actual spending in 2021 (from the 2021 Annual DSM Report, filed on March 1, 2022) and the TEP's proposed budget for 2022.

Program	Approved 2018 Budget	Actual Spending 2021	2022-2023 Budget
Residential Sector			
Limited-Income Energy Efficiency	\$1,004,252	\$794,897	\$1,007,966
Multi-Family	\$4,290,458	\$438,584	\$1,150,804
Res. Load Management Pilot Program ³	\$1,575,500	\$0	\$0
Res. New Construction	\$1,028,794	\$879,628	\$989,435
Shade Trees	\$251,652	\$247,516	\$234,245
Existing Homes	\$3,162,972	\$3,545,610	\$3,495,820
Efficient Products	\$1,865,824	\$2,270,870	\$1,856,723
Subtotal	\$13,179,452	\$8,177,105	\$8,734,993

³ The 2022 through 2023 budget dollars incorporated into Load Management Pilot as part of DSM Initiatives Sector.

Non-Residential Sector			
C & I Comprehensive ⁴	\$4,184,738	\$2,221,446	\$5,480,410
Commercial New Construction ⁶	\$249,738	\$135,506	\$0
Small Business Direct Install ⁶	\$754,639	\$618,449	\$0
Commercial DLC	\$2,204,377	\$215,128	\$500,000
Schools Energy Efficiency	\$1,000,000	\$845,271	\$1,001,045
Advanced Rooftop Control	\$0	\$0	\$822,949
Subtotal	\$8,393,492	\$4,035,800	\$7,804,404
Behavioral Sector			
Home Energy Reports	\$827,330	\$218,138	\$601,477
Behavioral Comprehensive	\$595,866	\$1,729,499	\$595,509
Subtotal	\$1,423,196	\$1,947,637	\$1,196,986
DSM Initiatives Sector			
Beneficial Electrification Pilot Program	\$0	\$0	\$300,000
Load Management Pilot Program	\$0	\$0	\$2,700,000
Customer Solutions Framework	\$0	\$0	\$1,500,000
Subtotal	\$0	\$0	\$4,500,000
Support Sector			
Education & Outreach	\$400,000	\$395,394	\$500,000
Energy Codes and Standards	\$25,000	\$15,750	\$25,000
Generation Improvement & Facility Upgrades	\$0	\$0	\$0
R&D, Prog. Dev., Analysis & Reporting Software	\$1,000,000		\$1,000,000
Subtotal	\$1,425,000		\$1,525,000
Total DSM Budget	\$22,916,762		\$23,761,383

TEP is requesting the flexibility to shift up to 50 percent of an individual program's annual budget between programs or customer segments to enable greater flexibility in providing support for customers. TEP requests the authority to shift unused funds to programs or measures where it is needed and can be deployed effectively. TEP states that the Company is committed to the following:

- Not shifting funds out of the LIEE or Schools EE programs, consistent with current budget shifting guidelines for these programs;
- Providing 60-day notice to the Commission for review and approval of any funding shift; and,

⁴ C&I Comprehensive Program includes the CNC and Small Business Direct Install programs.

- Continued compliance with all non-dated requirements including the need to maintain an equitable division of DSM funds between Residential and Non-Residential customer segments.

Performance Incentive Calculation

In Decision No. 73912, the Commission set the Performance Incentive Calculation (“PIC”) for TEP at eight percent of Net Benefits, capped at \$0.0125 per kWh. TEP states that its performance incentive equals \$987,681, as shown below:

Total kWh Savings (2021)	144,893,000
% Net Benefit Cap = (Total kWh savings*\$0.125)	\$1,811,163
Total Net Benefits (2022)	12,346,007
8% of Net Benefits	\$987,681
Performance Incentive	\$987,681

With the inclusion of the PIC, TEP’s total proposed budget is \$24,749,064.

DEMAND-SIDE MANAGEMENT RATES AND SURCHARGES

The current Commission-approved DSM assessment rates are \$0.0028898 per kWh for residential customers and 2.8292 percent for non-residential customers. TEP proposes a total DSM Plan budget of \$24,749,064, a DSM Surcharge of \$0.00303423 per kWh of retail sales for residential customers and 2.8597 percent for non-residential customers. TEP states that the revised DSM rates reflect expected costs of adding and implementing the ARC program.

The estimated monthly bill impact for residential customers using an average of 807 kWh per month would be approximately \$0.12.

TEP’S COLLECTED BUT UNALLOCATED 2021 DEMAND-SIDE MANAGEMENT FUNDS

TEP’s Application states that it proposes to refund a forecasted balance of \$6,059,627 in the DSM balancing account that was over collected by the end of 2021, but unallocated.⁵ Subsequently on May 11, 2022, TEP filed a separate motion with the Commission to modify Decision No. 77085 to allow the refund mentioned in TEP’s Application. The Commission ordered TEP in Decision No. 78673 to redeploy these funds, toward four DSM programs already approved by the Commission.⁶

⁵ See TEP Application filed June 1, 2021, at page 2, 1st sentence of last paragraph.

⁶ See Decision No. 78673 (August 22, 2022), filed in Docket No. E-01933A-17-0250.

SUMMARY OF STAFF RECOMMENDATIONS

Staff recommends that the Commission approve the removal of the Advanced Power Strips measure from the Efficient Products Program.

Staff recommends approval of the Custom Residential HVAC as described herein.

Staff recommends approval of Attic Insulation and Air Sealing as described herein.

Staff recommends approval of the modification to the LIEE Program (Low-Income Weatherization Program) as described herein.

Staff recommends approval of the modifications to the Multi-Family Program as described herein.

Staff recommends approval of the revised incentive levels for the New Prescriptive Compliance Path.

Staff recommends approval of the eligibility criteria modifications to the Residential New Construction Program.

Staff recommends approval of the proposed modification to the Shade Tree Program.

Staff recommends approval of the proposed modifications to the C&I Comprehensive Program.

Staff recommends approval of the Ductless Mini-Split Heat Pump measure as discussed herein.

Staff recommends approval of the Indoor Agriculture Dehumidifier measure as discussed herein.

Staff recommends approval of the LED Panel measure as discussed herein.

Staff recommends approval of the proposed modifications to the CNC Program.

Staff recommends approval of the Schools EE Program as a formal program.

Staff recommends approval of inclusion of the Small Business Direct Install and School Facilities Program as part of TEP's C&I Comprehensive Program.

Staff recommends approval of the proposed modification to the C&I Demand Response Program.

Staff recommends approval of the Advanced Rooftop Control Pilot Program.

Staff recommends approval of the proposed modifications to the Home Energy Reports Program.

Staff recommends approval of the proposed expansion of the Load Management Pilot Program and the incorporation of the Customer-Sited Energy Storage Pilot as described herein.

Staff recommends approval of the proposed Rate Optimized Smart Thermostat measure.

Staff recommends approval of the proposed Connected Pool Pump Controls measure.

Staff does not recommend approval of the proposed HVAC Thermal Storage measure.

Staff does not recommend approval of the proposed Customer-Sited Batteries measure.

Staff does not recommend approval of the proposed Connected Electric Water Heater measure.

Staff recommends approval of the proposed Connected Water Heater Control measure.

Staff does not recommend approval of the proposed Electric Forklifts measure.

Staff recommends approval of the proposed Standby Truck Refrigeration measure.

Staff does not recommend approval of the proposed Electric Belt Loader measure.

Staff recommends approval of the proposed Standby Tow Tug measure.

Staff recommends approval of the proposed Standby Pushback Tug measure.

Staff does not recommend approval of the proposed Induction Cooktop measure.

Staff recommends approval of TEP's proposed Innovative Customer Solutions. In addition, Staff recommends that TEP include any energy and peak-capacity savings in its annual DSM Reports.

Staff does not recommend a waiver of A.A.C. R14-2-2404(B), at this time.

Staff recommends approval of the total 2022 DSM Plan Budget of \$23,761,383.

Staff recommends approval of the collection of the calculated performance incentive amount of \$987,681.

Staff recommends approval of the updated DSM Surcharge of \$0.00303423 per kWh of retail sales for residential customers and 2.8597 percent for non-residential customers.

Staff recommends that TEP be allowed to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission.

Staff recommends that TEP be allowed to increase or decrease incentives with a 60-day notice to the Commission.

Staff recommends that funds budgeted for the LIEE Program and Schools EE Program be prohibited from being moved to other programs.

Staff recommends that the 2022 DSM Plan, total budget, performance incentive, and DSM surcharge amounts be approved herein remain in effect until further Order of the Commission.

Ranelle Spaladino

for
Elijah O. Abinah
Director
Utilities Division

EOA:CCN:elr\MGC

ORIGINATOR: Cameron Nance

THE COMMISSION

November 4, 2022

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On this 4th day of November, 2022, the foregoing document was filed with Docket Control as a Utilities Division Memorandum & Proposed Order, and copies of the foregoing were mailed on behalf of the Utilities Division to the following who have not consented to email service. On this date or as soon as possible thereafter, the Commission's eDocket program will automatically email a link to the foregoing to the following who have consented to email service.

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Chairwoman
SANDRA D. KENNEDY
Commissioner
JUSTIN OLSON
Commissioner
ANNA TOVAR
Commissioner
JIM O'CONNOR
Commissioner

DOCKET NO. E-01933A-21-0182
DECISION NO. _____
ORDER

BY THE COMMISSION:

Background

2. On June 13, 2022, TEP supplemented the 2022-2023 Plan to include an Advanced Rooftop Control (“ARC”) Pilot program and proposed increases to the original budget from \$22.9 million to \$23.8 million while also raising the Demand-Side Management (“DSM”) Surcharge of \$0.0028898 per kilowatt-hour (“kWh”) for residential customers to \$0.00303423, and the 2.8292 percent of non-residential customer bills to 2.8597 percent, before the Renewable Energy Surcharge (“RES”), Lost-Fixed Cost Recovery (“LFCR”), assessments, and taxes.

3. On September 30, 2022, TEP updated its 2022-2023 Plan to conform with Decision No. 78673, which ordered TEP to redeploy approximately \$12.4 million of collected but unspent funds toward four specific programs.

4. TEP's current EE Implementation Plan ("2018 EE Plan") was approved in Decision No. 77085 (February 20, 2019).

2022-2023 Energy Efficiency Implementation Plan

5. TEP's proposed 2022-2023 EE Plan would: (i) add one new pilot program; (ii) continue existing Commission-approved programs with proposed modifications; (iii) add 22 new program measures; (iv) discontinue one existing program (Electric Vehicles ["EVs"]); (v) introduce two new DSM initiatives; (vi) combine three programs (Commercial New Construction ["CNC"] and Small Business Direct Install programs into the Commercial and Industrial ["C&I"] Comprehensive program); and (vii) discontinue 12 commercial sector initiatives due to a lack of cost effectiveness. TEP has designed its 2022-2023 EE Plan to yield an estimated 146,601 Megawatt-hours ("MWh") of annual energy savings and providing approximately 72.18 Megawatts ("MW") of peak demand savings.

6. The focus of the Commission Utilities Division Staff's ("Staff") review is on new, modified, and/or expanded measures and programs proposed in TEP's 2022-2023 EE Plan. Therefore, Staff did not conduct cost-benefit analyses for measures or programs previously approved by the Commission. For measures or programs in which Staff conducted a cost-benefit analysis, Staff performed its analysis in accordance with A.A.C. R14-2-2412(B), which requires that the Societal Test be used for determining cost effectiveness of DSM measures or programs. Under the Societal Test, for a program or measure to be considered cost-effective, the ratio of benefits to costs must be greater than one. Staff used this method to determine if a program or measure is cost-effective.

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7. It is important to note that in cases where a measure is close to 1.0, Staff considers non-monetized benefits of a measure, such as avoided emissions or generation water savings because, although the value of these savings has not been determined, they are greater than zero. Staff's practice is to include an adder of up to 0.10 to the benefit-cost ratio.¹

8. The table below shows the current Commission-approved programs included in TEP's DSM Portfolio:

Residential Programs	
	Efficient Products Program
	Electric Vehicles
	Existing Homes
	Limited Income Energy Efficiency
	Multi-Family
	Residential New Construction
	Shade Tree
Non-Residential Programs	
	Commercial & Industrial Comprehensive Program
	CNC Program
	Schools Energy Efficiency Pilot Program
	Small Business Direct Install & School Facilities Program
	Combined Heat and Power Pilot Program*
	Commercial and Industrial Demand Response Program
	ARC Pilot Program
Behavioral Sector	
	Behavioral Comprehensive*
	Home Energy Reports
Support Sector	
	Energy Codes and Standards Enhancement*
	Consumer Education and Outreach*
Utility Improvement	
	Conservation Voltage Reduction*
	Generation Improvements and Facilities Upgrades*

* TEP is not proposing any modifications to these programs. Therefore, Staff did not include discussion of these programs in its report.

¹ Staff Report filed April 27, 2017, in Docket No. E-01345A-15-0182.

A. Residential Programs*Efficient Products Program*Description

9. The Efficient Products Program is an existing program that has been in place since 2008. The program offers promotions and partnerships that support the purchase and installation of EE and load management products by residential and small commercial customers in TEP's service territory.

10. The Program is primarily marketed through mass-market channels (i.e., radio, newspaper, website, social media, etc.) or through educational and training partnerships with participating retailers. TEP will add new education and marketing tools to the pool pump program element including print and digital marketing as well as webpages.

Modification

11. TEP intends to suspend the Advanced Power Strips measure because it is not cost-effective at this time (benefit-cost ratio = 0.61). TEP will monitor and screen this measure in future EE Plans to see if it can be brought back to cost effectiveness due to changes in TEP avoided costs, measure savings profiles, or reduced technology costs.

Staff Recommendation

12. Staff recommends that the Commission approve the removal of the Advanced Power Strips measure from the Efficient Products Program.

*Existing Homes Program*Description

13. The Existing Homes Program has been in place since 2008. The Program, now marketed as the "Efficient Home Program," is designed to encourage homeowners to increase the EE of their existing homes. The Program provides incentives for high-efficiency Heating, Ventilation, and Air Conditioning ("HVAC") equipment and tune-ups; duct sealing; and smart thermostats to reduce annual energy consumption, enable load shifting, and lower peak demand.

Modifications

14. In 2022, all smart thermostats rebated through the Efficient Home Program will be

1 demand response enabled. Customers will be encouraged to participate in TEP's smart thermostat
2 demand response program that will be offered as an element of the Load Management pilot.

3 15. In addition, TEP proposes to suspend the ENERGY STAR[®] heat pump water heater
4 as a standalone EE measure in the Efficient Home Program and include it only in the Load
5 Management Program with a focus on encouraging customers to use the load shifting value of the
6 technology. TEP will look at this measure in future EE plans to see if it becomes cost-effective due
7 to changes in costs or savings.

8 16. In response to customer needs for social distancing associated with the pandemic,
9 TEP plans to offer a free "virtual checkup" home energy auditing service that provides similar
10 benefits to an in-person audit. Mobile application technology will allow the customer to use the
11 video camera feature on a phone or tablet to tour the property while an experienced energy auditor
12 observes remotely, asks the customer questions, and makes recommendations for energy-saving
13 improvements.

14 17. TEP proposes to add the following two new measures to the Efficient Home Program:

15
16 1. Custom Residential HVAC

- 17 • TEP will consider residential applications of new space cooling and
18 heating technologies and identify cost-effective settings in which
19 emerging HVAC technologies can be deployed. TEP intends to
20 review projects on a case-by-case basis. TEP will work with
21 participating trade allies and customers who apply for a custom
22 residential HVAC incentive to determine if the technology can be
23 replicated to offer cost-effective savings at scale, and TEP
24 administrative time in reviewing projects will be prioritized based on
25 this criterion.
- 26 • Incentives will be paid for qualifying projects based on estimated
27 annual energy savings, with a maximum incentive cap of
28 \$5,000/home, using the min/max model to pay up to 75 percent of the
total project incremental cost for all customers and up to 85 percent of
incremental cost for qualifying low to moderate income customers. In
the case of an HVAC unit that is replacing an existing HVAC unit that
has burned out ("replace on burnout") and for new HVAC units that
are being added to an existing home renovation project, the baseline
unit against which savings will be measured is a new replacement
HVAC system that meets current codes and standards (Seasonal
Energy Efficiency Ratio ["SEER"] currently, a 14 SEER unit).

2. Attic Insulation and Air Sealing

- Adding attic insulation enables customers to better maintain desired temperatures throughout their homes, while also reducing air conditioning energy use and peak demand. Specifically, this new measure will incentivize customers to retrofit their homes with up to R43 insulation. TEP proposes to offer an incentive of up to 75 percent of the incremental cost for all residential customers and up to 85 percent for low to moderate income customers, using the min/max incentive model applied to the weighted average.

Staff Recommendations

18. Staff found Custom Residential HVAC to be cost-effective with a ratio of 2.01. Therefore, Staff recommends approval of Custom Residential HVAC as described herein.

19. Staff found Attic and Air Sealing to be cost-effective with a ratio of 1.71. Therefore, Staff recommends approval of Attic Insulation and Air Sealing as described herein.

Limited Income Energy Efficiency Program (Low-Income Weatherization Program)

Description

20. The Limited Income EE Program is an existing program most recently approved by the Commission in Decision No. 77085. Per-home expenditures were capped at \$6,000. In Decision No. 77085, the Commission authorized TEP to utilize additional agencies to those currently approved to assist in the delivery of the Program. In addition, Decision No. 78673 (August 22, 2022) increased the per-home spending cap from \$6,000 to \$10,000.

Modification

21. TEP proposes to change the name of the program from “Low-Income Weatherization” to “Limited Income Energy Efficiency” (“LIEE”) to better reflect TEP’s efforts to serve low-income customers by providing more services than just weatherization, such as customer education, virtual audits, and other measures and initiatives intended to help these customers save money, feel more comfortable in their homes, and recover from the pandemic-affected economy. Despite the name change, TEP plans to maintain all elements of the weatherization program measure list.

Staff Recommendation

22. Staff recommends approval of the Program's name change as described above as this modification does not impact the cost effectiveness.

Multi-Family ProgramDescription

23. The Multi-Family program is an existing program approved by the Commission in Decision No. 77085. The Program is designed to encourage property managers and customers living in multi-family housing to install devices that provide energy and demand savings, and to work with property managers to improve the overall efficiency of multi-family properties. The Program is available to multi-family properties with buildings consisting of five or more connecting residential units. Qualifying properties could include rentals and/or owner-occupied properties. The program encourages multi-family properties to install more efficient lighting, smart thermostats, and low-flow water devices. The Program also offers HVAC tune-up measures, Western Cooling Controls, and Duct Testing and Repair. Additionally, multi-family facility managers are encouraged to participate in the C&I Facilities Program, which promotes DSM measure installation in common areas. For existing measures, TEP offers incentives of up to 50 percent of incremental cost.

Modifications

24. TEP proposes to offer a new comprehensive whole building custom measure for multi-family properties. This custom comprehensive measure will cover the bundling of previously approved EE measures with other efficiency improvements into a single energy saving combination to be paid on a per kWh basis. In a manner similar to the method used to deliver the package of weatherization measures for low-income customers, this new measure will enable an implementation contractor to install as many measures as appropriate to the individual structures. TEP proposes to pay an incentive up to 75 percent of incremental project costs, pursuant to Decision No. 78673. For qualifying multi-family projects that serve low to moderate income customers, TEP proposes to offer incentives of up to 85 percent of incremental project costs. To qualify for custom whole building incentives, projects must be submitted with detailed energy simulation modeling

1 showing estimated annual savings. TEP will work with the program implementation contractor to
2 ensure that projects are cost-effective before custom incentives are approved for payment.

3 Staff Recommendations

4 25. Staff found the modifications to the Multi-Family Program to be cost-effective with
5 a ratio of 2.77. Therefore, Staff recommends approval of the modifications to the Multi-Family
6 program as described herein.

7 *Residential New Construction Program*

8 Description

9 26. The Residential New Construction program, marketed as the “Energy Smart Homes”
10 program, is an existing program most recently approved by the Commission in Decision No. 77085.
11 The program provides an incentive to homebuilders to install EE and load management measures
12 that help achieve a Home Energy Rating System (“HERS”) Index score of 65 or lower for a newly
13 constructed home, as determined by the ENERGY STAR[®] Certified Homes Program requirements
14 or equivalent. Newly constructed single-family and multi-family homes in the TEP service territory
15 are currently eligible to participate in the program.

16 27. This program will continue to be available to all qualifying properties; however, TEP
17 targets multi-family properties that serve the limited to moderate income market. TEP believes that
18 this segment of multi-family customers can be difficult to serve since it falls outside the federal
19 program guidelines, and the newly proposed custom comprehensive whole building measure creates
20 a more effective means of supporting the installation of energy and demand savings measures in
21 buildings occupied by these customers.

22 Modifications

23 28. TEP proposes to modify the Program's eligibility criteria to also include
24 manufactured homes in the program that meet the requirements of the ENERGY STAR[®]
25 Manufactured Homes program and are certified ENERGY STAR[®] or achieve equivalent
26 performance. TEP proposes to simplify the program to require ENERGY STAR[®] certification only
27 (or equivalent savings levels), without a specific HERS rating requirement. Certified ENERGY
28 STAR[®] or equivalent manufactured homes will be eligible to receive the same incentives as all other

1 participating homes. TEP proposes to provide bonus incentives to sales consultants who sell
2 ENERGY STAR[®] certified manufactured homes. These bonus incentives would be offered on a per
3 home sale basis with a sliding scale of between \$25 to \$100 depending upon program participation
4 and market conditions.

5 29. In addition, TEP proposes two new load management measures that will proactively
6 deliver better load shapes by installing them at the time of construction. The Company will also
7 offer a new prescriptive compliance path for Multi-Family New Construction.

8 1. Connected Smart Thermostats

9 30. This energy management technology facilitates EE savings and load shifting through
10 both programmed settings and via utility signals for demand response. The units were recently
11 approved for use in TEP's 2018 Residential Load Management Pilot program in Decision No.
12 77085. TEP will offer a builder incentive of up to 75 percent of the incremental cost per thermostat.

13 2. New Prescriptive Compliance Path for Multi-Family New Construction Projects

14 31. Multi-Family builders who opt to participate using the prescriptive path must meet
15 each individual prescriptive specification to earn an incentive. The prescriptive path has been
16 designed to achieve equivalent energy savings that would result from a project that opted to
17 participate in the performance path. TEP proposes to modify the incentives for new single family
18 and multi-family homes from a single overall Energy Smart Home incentive to a performance-based
19 scale totaling no more than \$300/home with the following list of incentives:

- 20 1. *Energy Smart Home*: \$200/dwelling unit (using Performance or Prescriptive
21 Path.)
- 22 2. *Connected Smart Thermostats*: up to 75 percent of the incremental cost per
23 thermostat.
- 24 3. *Connected electric resistance water heaters*: up to 75 percent of the
25 incremental cost per water heater.
- 26 4. The Company will also work through the Load Management Pilot to identify
27 participating home builders interested in incorporating connected electric
28 water heating as a load shifting measure into new construction by offering up
to 75 percent of the incremental cost per connected electric resistance or heat
pump water heater.

5. The Company will also work through the Beneficial Electrification Initiative to find home builders interested in installing induction cooktops.

Staff Recommendations

32. Staff recommends approval of the revised incentive levels for the New Prescriptive Compliance Path as this does not impact cost effectiveness.

33. Staff recommends approval of the eligibility criteria modifications to the Residential New Construction Program as described above as this modification does not impact the cost effectiveness.

Shade Tree

Description

34. The Shade Tree Program is an existing program that was most recently approved by the Commission in Decision No. 77085. The Shade Tree Program, currently marketed under the name "Trees for You," provides desert adapted trees to TEP customers. As currently approved, the program runs from September through May. Delivery is currently suspended during the summer months (June to August), because of the low survival rate for trees planted during the summer heat. The trees are offered at reduced prices. The fee per 15-gallon tree for non-residential customers is \$25; the fee per five-gallon tree for non-residential customers is \$10; and the fee per five-gallon tree for residential customers is \$5.

Modification

35. The Program currently limits customers to three five-gallon trees per year. TEP requests a slight modification to specify the program may limit customers to three five-gallon trees or less per year. This change will give the company greater flexibility to accommodate varying levels of customer demand for trees and help ensure the ability for more customers to participate within the Program's budget.

Staff Recommendation

36. Staff recommends approval of the proposed modification to the Shade Tree program as the modification does not impact cost effectiveness.

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B. Non-Residential Programs*Commercial & Industrial Comprehensive Program*Description

37. The C&I Comprehensive Program, currently marketed as the "EasySave Plus" program, is an existing program which has been offered since 2008 and most recently approved by the Commission in Decision No. 77085. The program provides incentives to TEP's non-residential customers for the installation of DSM measures in existing facilities. The program currently offers incentives up to a maximum of 50 percent of incremental cost for the installation of high efficiency HVAC, lighting, refrigeration equipment and controls, motors and motor drives, plug load equipment, as well as many other high-efficiency measures. Customers may elect to participate in the CNC Program by applying directly to TEP or through an installation contractor.

Modifications

38. TEP proposes to continue the C&I Comprehensive Program in 2022 with the following modifications to reduce program overhead costs and improve cost effectiveness: 1) TEP proposes to incorporate the existing Small Business Direct Install and School Facilities program and the CNC Program into the C&I Comprehensive Program; 2) TEP proposes to adjust the range of incentive levels to up to as much as 75 percent of incremental cost for large and medium size customers and 85 percent of incremental costs for small businesses, schools, and nonprofits; and 3) TEP requests to incorporate the min/max model into the custom measure calculation and set the incentive range to \$0.06 to \$0.10 per kWh saved. These updates will give TEP the ability to adjust incentives up or down based on market conditions, savings goals, and rate class.

39. As approved in Decision No. 77085, for any individual project, incentives are limited to a cap of \$600,000 per year. Any additional projects for the same customer in the same year are eligible for up to 50 percent of standard incentive amounts. For 2022, TEP asks to modify this guidance for the incentive cap to further specify that within the above-mentioned parameters, no single customer will be eligible to receive more than 25 percent of a program's total annual incentive budget. TEP intends to offer higher incentive levels for deemed and custom measures installed at qualifying school facilities, nonprofits, and small businesses within the C&I Comprehensive

1 Program to accommodate the special needs of these customers. In addition, in response to
2 Chairwoman Márquez Peterson's letter on February 19, 2020, TEP also proposes to offer these
3 higher incentive levels to encourage efficiency improvements for qualifying historic and cultural
4 facilities.

5 40. Further, TEP proposes to launch a new Prescriptive Express Initiative that will reduce
6 the time, effort, and money necessary for both contractors and small businesses to participate in
7 TEP's efficiency programs. Qualifying EE projects with prescriptive measures totaling less than
8 \$10,000 would be able to participate and would require less documentation and information on
9 application forms, thereby lowering the hurdle for program participation. To further encourage
10 participation in this initiative, TEP proposes to offer bonus incentives up to \$100 per project to
11 contractors who complete qualifying new projects for targeted small businesses and nonprofits.

12 41. TEP intends to maintain the CNC Program parameters as approved by the
13 Commission in Decision No. 77085 with the following exception: customers served under the
14 Commercial New Construction program element will no longer be held to the previous \$75,000 per
15 project limit and will instead be subject to the newly proposed incentive caps for all C&I customers
16 as discussed above.

17 42. The Company proposes to offer the following three new measures:

18
19 Ductless Mini-Split Heat Pumps

20 TEP proposes to introduce new incentives for non-residential customers to install
21 high efficiency ductless mini-split heat pumps which are well-suited to facilities
22 without existing ductwork or central HVAC systems. Because they are available up
23 to a SEER of 25, they are more efficient for cooling and heating compared to window
24 or in-room AC units and electric resistance heating. For qualifying business
25 customers installing new high efficiency ductless mini-split heat pumps that exceed
the baseline standard of SEER 14, TEP plans to provide incentives of up to 75 percent
of total incremental cost difference between the proposed EE measure and less
efficient baseline measure for large and medium-size customers and up to 85 percent
of incremental cost for small businesses, schools, and nonprofits.

26 Indoor Agriculture Dehumidifiers

27 Indoor growing facilities must maintain appropriate temperatures, airflow, and
28 absolute humidity levels. Plants produce water vapor as they grow, creating a

constant need for dehumidification indoors. Because of the near constant run times of dehumidifiers, high efficiency ENERGY STAR[®] models provide sizeable savings over less efficient versions. TEP proposes to incentivize the use of such high efficiency models and provide incentives of up to 75 percent of measure incremental cost difference between the proposed EE measure and less efficient baseline measure for large and medium-size customers and up to 85 percent of incremental cost for small businesses.

LED Panels

TEP proposes to offer incentives for customers who replace existing T8 linear fluorescents and ballasts with panels. These replacement panels are more efficient, have a longer measure life, lower maintenance costs, and other environmental benefits including eliminating mercury and other toxic materials. TEP plans to provide incentives of up to 75 percent of measure incremental cost difference between the proposed EE measure and less efficient baseline measure for large and medium-size customers and up to 85 percent of incremental cost for small businesses.

Staff Recommendations

43. Staff recommends approval of the proposed modifications to the C&I Comprehensive Program administration and incentive levels as these modifications do not impact cost effectiveness.

44. Staff calculated the benefit-cost ratio of the Ductless Mini-Split Heat Pump measure to be 1.43. Therefore, Staff recommends approval of the Ductless Mini-Split Heat Pump measure as discussed herein.

45. Staff calculated the benefit-cost ratio of the Indoor Agriculture Dehumidifier measure to be 2.29. Therefore, Staff recommends approval of the Indoor Agriculture Dehumidifier measure as discussed herein.

46. Staff calculated the benefit-cost ratio of the LED Panel measure to be 1.94. Therefore, Staff recommends approval of the LED Panel measure as discussed herein.

Commercial New Construction Program

Description

47. The CNC Program is an existing program most recently approved by the Commission in Decision No. 77085. The CNC Program is designed to promote EE and load management in new commercial facilities. Customers may elect to participate in the CNC Program by applying directly to TEP or through an installation contractor. In addition, the CNC Program provides technical support and consumer education regarding available EE design options for new commercial

1 construction. TEP currently pays incentives to the building owners or developers at \$0.06 per kWh
2 for building energy use reduction in kWh during the first year of building operation up to a maximum
3 of 50 percent of the incremental cost of EE equipment, construction, or design over the baseline
4 equipment, construction, or design cost necessary to meet the local building codes. Each project has
5 a not-to-exceed incentive cap of \$75,000. Moreover, all incentives for customers received through
6 any TEP offering are subject to the cap approved in Decision No. 77085, specifying that incentives
7 any C&I customer may receive on an annual basis be limited to no more than \$600,000, plus 50
8 percent of any remaining eligible incentive amount.

9 Modifications

10 48. TEP proposes that the CNC Program be incorporated into the C&I Comprehensive
11 Program while keeping the same program parameters to continue as approved in Decision No.
12 77085, except for the following proposed modification: CNC Program eligibility requirements will
13 be simplified so participating customers will no longer be held to two different incentive caps; the
14 previous \$75,000 per project limit will be removed, while maintaining the current cap of \$600,000
15 per year, as approved in Decision No. 77085; participants would also be subject to the newly
16 proposed incentive cap specifying that no individual C&I customer may be eligible to receive more
17 than 25 percent of a program's annual incentive budget.

18 Staff Recommendation

19 49. Staff recommends approval of the proposed modifications to the CNC Program as
20 these modifications do not impact cost effectiveness.

21 *Schools Energy Efficiency Pilot Program*

22 Description

23 50. The Schools Energy Efficiency ("SEE") Pilot Program is an existing program
24 approved by the Commission in Decision No. 75450 (February 11, 2016). It offers incentives for
25 DSM measures in existing K-12 schools that cannot raise the necessary capital to participate in the
26 current TEP non-residential program. The program provides incentives at 100 percent of the project
27 cost for the installation of DSM measures including: lighting equipment and controls, HVAC
28 equipment, motors and motor drives, refrigeration, and custom measures. The SEE program has a

cap of \$150,000 per public school district or charter school.

Modifications

51. TEP proposes the following modifications to the program, given that this program has been successfully operating since 2016. TEP proposes to formalize this program and eliminate the word "Pilot" to recognize its formal status as an approved program. TEP intends to operate the SEE Program with an annual budget of \$1,000,000 in 2022 in accordance with Decision No. 77085. Pursuant to Decision No. 78673, the per-school district maximum incentive of \$150,000 may be waived and a \$100,000 maximum per school was added. In addition, Decision No. 78673 provided TEP flexibility to increase the SEE Program budget.

Staff Recommendations

52. Staff recommends approval of the SEE Program as a formal program.

Small Business Direct Install and School Facilities Program

Description

53. The Small Business Direct Install and School Facilities Program, marketed as the "EasySave Program," is an existing program most recently approved by the Commission in Decision No. 77085. The program is open to participation by all small non-residential customers and all K-12 schools in the TEP service territory. The program provides incentives for retrofit and replace-on-burnout DSM measures in existing small businesses, including high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures. To respond to market trends for all approved measures within this program, TEP uses a min/max incentive model that currently pays incentives of up to 50 percent of incremental costs, which is defined as the installed cost of an EE measure over the installed cost of a less efficient baseline unit that would otherwise have been installed in absence of incentives. TEP currently uses the min/max model to pay incentives of \$0.06 per kWh saved for all lighting measures during the first year of equipment operation.

Modifications

54. TEP proposes that the Small Business Direct Install and School Facilities Program be incorporated into the C&I Comprehensive Program in 2022.

Staff Recommendations

55. Staff recommends approval of inclusion of the Small Business Direct Install and School Facilities Program as part of TEP's C&I Comprehensive Program as this does not impact cost effectiveness.

Commercial and Industrial Demand Response ProgramDescription

56. The C&I Demand Response Program, also known as C&I Direct Load Control ("DLC") or Direct Load Response Program and marketed as "TEP DemandSmart," is an existing program approved by the Commission in Decision No. 71787 (July 12, 2010). The program is designed to manage peak demand and mitigate system emergencies through C&I load curtailment. The program provides up to 40 MW of summer peak demand reduction and is available for up to 80 hours per customer per year, with a typical load control event lasting three to four hours. Customers are compensated with incentives for their participation at negotiated levels depending on multiple factors, including the size of the facility, amount of kilowatt ("kW") under load control, and the frequency with which the resource can be utilized. Some customers only participate in emergency load control events at a reduced incentive level. In the 2018 Plan, TEP shifted the administration of this program to in-house personnel to improve cost-effectiveness, as approved in Decision No. 77085.

Modification

57. The Company proposes to modify this program to clarify that participating non-residential customers must be able to provide a minimum of at least 100 kW of load reduction when called upon.

Staff Recommendation

58. Staff recommends approval of the proposed modification to the C&I Demand Response Program as this does not impact cost effectiveness.

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*Advanced Rooftop Control*Description

59. TEP proposes to offer a new ARC Pilot that is designed to manage energy use and maximize EE while increasing fresh air ventilation by providing incentives for high efficiency air handling equipment paired with outside air economizers, carbon dioxide sensors, and energy management systems to automatically control equipment and thermostats. The ARC pilot is limited to public, private, and charter K-12 schools, and nonprofit organizations with a 501(C)(3) designation.

Staff Recommendations

60. Staff calculated the benefit-cost ratio of the proposed ARC Pilot Program to be 1.67. Therefore, Staff recommends approval of the ARC Pilot Program.

C. Behavioral Sector*Home Energy Reports*Description

61. The Home Energy Reports Program is an existing program that was most recently approved by the Commission in Decision No. 77085. The program is designed to promote behaviors that conserve energy or manage load, such as turning off lights or appliances, adjusting thermostat set points, and performing regular equipment maintenance.

Modifications

62. TEP intends to offer improved mobile capabilities and to add more data analytics capabilities that enable more personalized energy guidance and recommendations for participants, including mid-month alerts that tell customers about their current usage with forecasts for the remainder of the month, as well as other messaging to help customers better understand their individual usage patterns and actions they can take to reduce and shift energy use to save on home energy costs. Additionally, TEP intends to explore incorporating new technologies such as personal digital assistants like Google Assistant and Amazon Alexa to deliver energy savings tips and behavioral EE messaging and assist customers with impairments or limited mobility.

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Staff Recommendations

63. Staff recommends approval of the proposed modifications to the Home Energy Reports Program as the modifications do not impact cost effectiveness.

D. DSM Initiatives*Load Management Pilot Program*Description

64. TEP states that it is submitting a new Residential Load Management Pilot Program that incorporates Feeder Level Energy Storage, Residential Thermal Storage, and Residential Demand Response in accordance with Decision No. 75975 (February 24, 2017). This Pilot was initially approved by the Commission in Decision No. 77085 (February 20, 2019), and TEP is currently working to implement the Pilot. TEP proposes to implement the following:

1. Feeder Level Energy Storage - Feeder-level battery storage that is utilized to reduce system peak, provide feeder congestion relief, and support local power quality on selected distribution feeders.
2. Thermal Storage - Connected heat pump water heaters and connected water heater controls that can be retrofitted on existing water heaters will be used to store thermal energy to reduce system peak demand, provide on-peak bill savings for participating customers, and help integrate midday solar energy onto the grid.
3. Demand Response with Connected Smart Thermostats - Connected smart thermostats will be used to manage participants' air conditioners or heat pumps/heating by adjusting thermostat settings during peak demand events. TEP will offer customers an initial annual incentive of \$40 for participating in Demand Response, with flexibility to adjust the incentive level up to \$80 and offer other special promotions using a min/max model if needed to drive participation.

65. TEP proposes to expand the Load Management Pilot to also serve non-residential customers.

Modifications

66. TEP intends to maintain the currently approved program elements, while also expanding the program as follows in accordance with Decision No. 75975, and in alignment with Decision No. 76313 regarding Arizona Public Service Company: 1) TEP proposes to expand the

1 Load Management Pilot to also serve non-residential customers; and 2) to streamline administration
2 and operations, TEP also proposes to incorporate the TEP Customer-Sited Energy Storage Pilot
3 (“CESP”) filed in Docket E-01933A-19-0149 into the Load Management Pilot. The CESP is
4 consistent with the Load Management Pilot objectives. TEP has incorporated the proposed budget
5 for the CESP into the Load Management Pilot budget in 2022-2023 and proposes to retain all
6 elements of the CESP program design as proposed in the original pilot filing. If the CESP is not
7 approved for inclusion within the Load Management Pilot, TEP will allocate those funds to other
8 load management measures within the Pilot.

9 67. In addition, TEP proposes to further explore opportunities for energy storage and load
10 management by offering four new pilot measures. The 2022-2023 Plan carries forward unchanged
11 the Company's request for rate optimized thermostats and connected pool pumps from 2021 and it
12 includes modifications to the previous requests for customer-sited batteries and thermal storage to
13 help integrate the CESP into the Load Management Pilot.

14 *Rate Optimized Smart Thermostats*

15 68. TEP proposes to offer smart thermostats that are optimized to work with TEP's Time-
16 of-Use (“TOU”) and demand-based tariffs by automatically adjusting thermostat operation to reduce
17 on-peak demand and shift customer energy use into pre- and post-peak periods. The Company
18 proposes to offer rate optimized smart thermostats at no cost to eligible residential customers in
19 owner occupied and rental single-family and multi-family dwellings. TEP proposes to include this
20 measure in the Load Management Pilot and co-promote it to residential customers through the
21 Existing Homes, Multi-family, LIEE, and Behavioral Comprehensive programs.

22 *Connected Pool Pump Controls*

23 69. TEP is proposing a new pilot measure for connected pool pump controls for
24 customers to run their pool pumps exclusively during off-peak times, and to remotely monitor and
25 control pumps. TEP proposes to offer customers a \$30 incentive to encourage adoption of both new
26 and retrofit connected controls, and to promote this pilot measure to residential customers primarily
27 through the pool component of the Efficient Products Program.

28 ...

HVAC Thermal Storage

70. For non-residential customers, TEP proposes to pilot the installation and operation of HVAC thermal storage units that shift HVAC cooling load to off-peak hours. These units serve as thermal batteries by making ice or chilled water during off-peak hours and then using that ice during on-peak periods in an ice-cooled evaporator coil to chill the air supply of the customer's air conditioner. Bi-directional Wi-Fi communication enables remote customer control and utility dispatch for demand response and other changes to the unit's charge and discharge settings. Energy efficient thermal storage for commercial customers will be incentivized at between \$400/kW to \$800/kW for systems of up to 75 kW. Qualifying commercial customers must be on a TEP TOU or demand rate plan and must install new equipment capable of shifting 20 kW or more during the entire on-peak period. Due to the nature of load shifting ordered by these units, eligibility requirements will preclude participation in this measure by customers who elect to participate in the residential battery storage measure discussed above.

Customer-Sited Batteries

71. For non-residential customers, TEP proposes to support the installation and operation of customer-sited battery storage systems that enable customers on TOU and demand rates to more effectively manage electric consumption, reduce peak demand, absorb midday solar production, and provide backup power in case of an outage. Battery storage for commercial customers will be incentivized at between \$400/kW to \$800/kW for systems of up to 75 kW. Qualifying commercial customers must be on a TEP TOU or demand rate plan and must install new equipment capable of shifting 20 kW or more during the entire on-peak period. Due to the nature of load shifting offered by these units, eligibility requirements will preclude participation in this measure by customers who elect to participate in the HVAC thermal storage measure discussed above.

Connected Electric Water Heaters

72. TEP proposes to add a new connected electric water heating pilot measure that provides incentives for residential customers and homebuilders to install connected electric water heaters that offer capabilities for energy savings, load shifting, and participation in utility demand response programs. Qualifying water heaters must have a connected communication module that

1 allows for remote monitoring and control. Using the min/max incentive model applied to the
2 weighted average based on the total incremental cost of the added bidirectional communications
3 capability in the water heater, TEP plans to provide incentives of up to 75 percent of total incremental
4 cost difference between qualifying connected electric water heaters and standard electric water
5 heaters without connected communications for residential customers and large and medium-size
6 non-residential customers and up to 85 percent of incremental cost for low-income customers, small
7 businesses, schools, and nonprofits. TEP proposes to leverage home developer contacts through the
8 Residential New Construction Program to offer builders incentives install this pilot measure in their
9 new homes.

10 *Connected Water Heater Controls*

11 73. TEP proposes to offer connected water heater controls as retrofits for existing water
12 heaters. The new retrofit control devices will be installed on existing electric water heaters and
13 programmed to align with TEP TOU or TOU with demand rates to automatically shift load to off-
14 peak periods. The units will pre-heat water before on-peak time periods to reduce customer bills
15 and save peak demand. Using the min/max incentive model applied to the weighted average based
16 on the total incremental cost of the added bidirectional communications capability in the retrofit
17 device, TEP plans to provide incentives of up to 75 percent of total incremental cost of a qualifying
18 connected controller for residential customers and large and medium-size non-residential customers
19 and up to 85 percent of incremental cost for low-income customers, small businesses, schools, and
20 nonprofits.

21 Staff Recommendation

22 74. Staff recommends approval of the proposed expansion of the Load Management Pilot
23 Program and the incorporation of the Customer-Sited Energy Storage Pilot as described herein.

24 75. Staff calculated the benefit-cost ratio of the Rate Optimized Smart Thermostat
25 measure to be 2.02. Therefore, Staff recommends approval of the proposed Rate Optimized Smart
26 Thermostat measure.

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76. Staff calculated the benefit-cost ratio of the Connected Pool Pump Controls measure to be 1.94. Therefore, Staff recommends approval of the proposed Connected Pool Pump Controls measure.

77. Staff calculated the benefit-cost ratio of the HVAC Thermal Storage measure to be 0.27. Therefore, Staff does not recommend approval of the proposed HVAC Thermal Storage measure.

78. Staff calculated the benefit-cost ratio of the Customer-Sited Batteries measure to be 0.40. Therefore, Staff does not recommend approval of the proposed Customer-Sited Batteries measure.

79. Staff calculated the benefit-cost ratio of the Connected Electric Water Heaters measure to be 0.06. Therefore, Staff does not recommend approval of the proposed Connected Electric Water Heater measure.

80. Staff calculated the benefit-cost of the Connected Water Heater Control measure ratio to be 0.47. Therefore, Staff does not recommend approval of the proposed Connected Water Heater Control measure.

Beneficial Electrification Pilot Program

81. TEP proposes to offer new beneficial electrification measures to non-residential customers through the C&I Comprehensive and New Construction Program. These measures are described in more detail below.

Electric Forklifts

Description

82. Electric Forklifts are used primarily for lifting and moving loads. They are most often found in facilities such as warehouses and shipping depots. TEP proposes to pay an initial incentive of \$1,250 per unit for a qualifying new electric forklift or for converting a forklift with an internal combustion engine with a maximum of \$50,000 per customer meter.

Staff Recommendation

83. Staff calculated the benefit-cost ratio of the Electric Forklift measure to be 0.69. Therefore, Staff does not recommend approval of the proposed Electric Forklifts measure.

*Standby Truck Refrigeration*Description

84. Electric standby truck refrigeration units offer the ability for trucks to use electricity to operate equipment in the truck cab and maintain temperatures in both the cab and in the trailer while loading and unloading cargo at a distribution center. Eliminating truck engine idling time saves energy and reduces overall fuel costs, while also lowering emissions, and creating healthier, safer, and quieter workspaces. TEP proposes to pay an initial incentive of \$750 per unit for a qualifying newly installed electrification station, with a maximum of \$50,000 per customer meter.

Staff Recommendation

85. Staff calculated the benefit-cost ratio of the Standby Truck Refrigeration measure to be 2.54. Therefore, Staff recommends approval of the proposed Standby Truck Refrigeration measure.

*Electric Ground Support Equipment*Description

86. Ground support vehicles including belt loaders, tow tugs, and pushback tugs are designed for moving heavy objects such as planes, and for loading, unloading and transporting baggage and packages. All three types of vehicles typically rely on gasoline powered internal combustion engines. Shifting these vehicles to an electric power supply creates the opportunity to save energy, reduce operating and maintenance expense, lower fuel costs, decrease emissions, and improve worker health and safety while also providing energy storage and other grid benefits. TEP proposes to pay an initial per unit incentive of \$1,100 per belt loader, \$2,500 per tow tug, and \$5,000 per push tug, with a maximum of \$50,000 per customer meter per year.

Staff Recommendation

87. Staff calculated the benefit-cost ratio of the Electric Belt Loader measure to be 0.75. Therefore, Staff does not recommend approval of the proposed Electric Belt Loader measure.

88. Staff calculated the benefit-cost ratio of the Tow Tug measure to be 2.09. Therefore, Staff recommends approval of the proposed Standby Tow Tug measure.

...

89. Staff calculated the benefit-cost ratio of the Pushback Tug measure to be 1.59. Therefore, Staff recommends approval of the proposed Standby Pushback Tug measure.

Induction Cooktop

Description

90. Induction cooking is a highly energy-efficient technology that uses magnetic currents to directly heat cookware, unlike most stoves that indirectly heat the cookware by first heating the electric cooktop surface. This efficiency means that induction cooktops can heat foods and liquids up to 50 percent faster than electric or gas cooktops. In addition to saving energy directly, the technology also offers significant indirect energy savings by reducing the amount of waste heat it adds into homes, requiring less fan run time for cooking area ventilation and lowering HVAC costs. TEP proposes to leverage home developer contacts through the Residential New Construction Program to offer builders incentives of \$200 per induction cooktop to install this pilot measure in their new homes.

Staff Recommendation

91. Staff calculated the benefit-cost ratio of the Induction Cooktop measure to be 0.22. Therefore, Staff does not recommend approval of the proposed Induction Cooktop measure.

Innovative Customer Solutions

Description

92. TEP is proposing the Innovative Customer Solutions ("ICS") pilot framework for exploring technology innovation and assessing customer value in a limited real-world testing environment that enables the Company to ascertain viability prior to seeking Commission approval for larger scale initiatives. The ICS framework will allow TEP to collaborate with stakeholders to conceive new proof-of-concept initiatives, and rapidly test combinations of technologies, customer communication and education, financing, and data analysis to determine which provide the most value to customers.

93. The new framework will address multiple objectives, including:

1. Enable a proactive review of emerging technologies that have the potential to affect our grid and customer base.

2. Provide a structure for testing and developing new offerings to assist customers who may be underserved by existing programs.
3. Gather feedback from customers about their motivations, drivers, preferences, and other elements of their experiences, including the value and benefits they receive from participating, and the likelihood to recommend to others and/or participate in the future.
4. Obtain valuable insights into customer use cases and new business models, as well as the benefits associated with the technologies, rates, and other attributes of the initiative under investigation.
5. Gain knowledge and understanding of how to safely and more effectively connect, communicate and dispatch distributed energy technologies with high levels of reliability.
6. Facilitate the ability to rapidly perform controlled experiments and evaluations outside of the more time-consuming process of a typical DSM filing cycle.
7. Lower risk of scaling DSM programs by conducting appropriate due diligence for proposed programs/products/services, under controlled conditions, prior to rollout to a larger cohort. By meeting these objectives, the framework will provide significant ratepayer benefits since it enables TEP to better refine and identify products, programs, and services that benefit a wider majority of our customers.

94. TEP proposes that up to a maximum of seven percent of annual DSM spending could be allocated to this proposed experimentation framework. TEP believes this will enable the Company to have the flexibility to better leverage future DSM dollars collected by proactively identifying products, services, and programs that provide the most overall value to our customer base.

95. TEP proposes to accomplish the program objectives through applied research and small-scale pilots. Such efforts will have different research designs and target different customer demographics, psychographics, and regions of TEP's territory depending on the customer issue being addressed. Such combinations may include technology assessments and comparisons, targeted customer engagement program studies, new service offerings at the commercial level, and/or recombining previously defined measures and rates into new offerings. TEP will convene a collaborative group to discuss potential pilot initiatives including:

Mobile/Manufactured Home Weatherization

96. This micro-pilot targets mobile home communities where TEP can work on a new approach to weatherize all the homes within the community at the same time to improve cost effectiveness, increase EE and ensure they have functioning HVAC equipment. This micro-pilot would be specifically targeted to reach low to moderate-income customers who are between 200 percent of federal poverty level (above the level that can qualify for limited income weatherization assistance) and below 80 percent of the regional adjusted median income.

Connected Communities

97. This micro-pilot targets multifamily communities that serve low to moderate income customers and offers connected devices as well as community Wi-Fi to support voice-activated digital assistants, home energy management systems and energy monitoring devices that can provide customers with real-time feedback about their home's energy use and ways to save energy and reduce costs. Participating customers could enroll in TEP's TOU or demand rates and allow TEP to manage their devices and/or send them real time messages to help shift load to off-peak times and reduce energy costs.

Shared Community Storage

98. This micro-pilot would enable small businesses, nonprofits, and residential customers to pay for "shares" of utility scale community energy storage to offset their monthly electric demand. The effort would be targeted at customers who would not otherwise be able to benefit from an energy storage system due to financial constraints because they are renters or other limitations. The actual battery storage devices could be sited in locations appropriate to support grid functionality and resiliency. In addition to stationary battery systems, the effort could also support shared community Vehicle to Grid ("V2G") charging, storage, and discharging.

Staff Recommendation

99. Staff recommends approval of TEP's proposed Innovative Customer Solutions. In addition, Staff recommends that TEP include any energy and peak-capacity savings in its annual DSM Reports.

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E. Portfolio Management

100. TEP serves as the program administrator for the DSM portfolio. TEP provides comprehensive program administrative, contract management, strategic planning, and program oversight functions including financial planning and budgeting. TEP has a dedicated team of DSM and Customer Solutions program staff that perform these functions for the Company.

Suspended Commercial Initiatives

101. TEP proposes to discontinue offering the following measures as the Company no longer finds them cost effective.

Program	Measure
Electric Vehicles	Electric Vehicles
Efficient Products	Advanced Power Strip
C&I Comprehensive	Advanced Power Strip
	Anti-Sweat Heater Controls
	Commercial Kitchen Exhaust Fan
	Energy Efficient Exit Sign
	Energy Efficient TEFC Motors
	Evaporative Fan Controls
	Green Motor Rewind
	VSD Automated Drain Trap Compressor
	Variable Refrigerant Flow
	Window Films

Electric Vehicles

102. TEP's EV Pilot program was proposed in the Company's 2018 DSM Plan and approved by the Commission in Decision No. 77085 (February 20, 2019). The Company states it has shifted its previously approved budget for its EV efforts out of the EV program and into other DSM programs. TEP intends to continue its EV efforts outside of its DSM plan, as described in the Company's EV Policy Implementation Plan.²

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² The Commission opened Docket No. E-00000A-21-0104 to address EV Policy Implementation Plans.

Request For Waiver

103. A.A.C. R14-2-2404(B) sets forth the EE standard for 2020 at 22 percent. TEP states that at the end of 2020, the Company achieved cumulative savings of 1,779,778 MWh, which represents 21.83 percent cumulative annual energy savings as a percent of retail sales and forecasts that by the end of 2022, TEP will achieve total cumulative savings of 2,059,878 MWh, which represents 24.38 percent of adjusted retail sales.

104. Staff notes that the Commission previously approved a waiver of A.A.C. R14-2-2404(B) for TEP in Decision No. 77085 (February 20, 2019). Despite the Commission's previous waiver of A.A.C. R14-2-2404(B), Staff notes that the Company plans to attain 24.38 percent of adjusted retail sales by the end of 2022. Therefore, Staff does not believe a waiver is necessary with respect to A.A.C. R14-2-2404(B), at this time.

2022-2023 EE PLAN BUDGET BY PROGRAM

Program	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Measurement, Evaluation and Research	Total Budget
Residential Sector						
Limited-Income Energy Efficiency	\$714,876	\$217,492	\$15,119	\$20,159	\$40,319	\$1,007,966
Multi-Family	\$495,942	\$511,301	\$1,267	\$100,262	\$42,032	\$1,150,804
Residential New Construction	\$808,517	\$64,659	\$37,104	\$39,577	\$39,577	\$989,435
Shade Trees	\$229,353	\$1	\$207	\$0	\$4,685	\$234,245
Existing Homes	\$2,129,576	\$1,164,086	\$27,366	\$34,958	\$139,833	\$3,495,820
Efficient Products	\$797,141	\$822,849	\$143,896	\$18,567	\$74,269	\$1,856,723
Subtotal	\$5,175,406	\$2,780,388	\$224,959	\$213,524	\$340,715	\$8,734,993
Non-Residential Sector						
C & I Comprehensive	\$3,869,499	\$1,284,827	\$109,608	\$41,103	\$175,373	\$5,480,410
Commercial DLC	\$330,757	\$96,392	\$15,000	\$7,851	\$50,000	\$500,000
Commercial Schools	\$827,780	\$133,223	\$0	\$0	\$40,042	\$1,001,045
Subtotal	\$5,028,036	\$1,514,441	\$124,608	\$48,954	\$265,415	\$6,981,455
Behavioral Sector						

Program	Incentives	Program Delivery	Program Marketing	Utility Program Administration	Measurement, Evaluation and Research	Total Budget
Home Energy Reports	\$81,450	\$471,909	\$12,030	\$12,030	\$24,059	\$601,477
Behavioral Comprehensive	\$349,989	\$203,690	\$12,055	\$5,955	\$23,820	\$595,509
Subtotal	\$431,439	\$675,599	\$24,085	\$17,985	\$47,879	\$1,196,986
DSM Initiatives Sector						
Beneficial Electrification Pilot Program	\$30,000	\$168,000	\$15,000	\$3,000	\$84,000	\$300,000
Load Management Pilot Program	\$270,000	\$1,512,000	\$135,000	\$27,000	\$756,000	\$2,700,000
Customer Solutions Framework	\$150,000	\$840,000	\$75,000	\$15,000	\$420,000	\$1,500,000
Subtotal	\$450,000	\$2,520,000	\$225,000	\$45,000	\$1,260,000	\$4,500,000
Advanced Rooftop Control						
Advanced Rooftop Control	\$607,949	\$185,000	\$25,000	\$5,000	\$0	\$822,949
Subtotal	\$607,949	\$185,000	\$25,000	\$5,000	\$0.00	\$822,949
Support Sector						
Education & Outreach	\$0	\$54,340	\$408,422	\$37,239	\$0	\$500,000
Energy Codes and Standards	\$0	\$24,312	\$0	\$0	\$688	\$25,000
Generation Improvement & Facility Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
Research & Development	\$0	\$26,361	\$0	\$238,384	\$735,255	\$1,000,000
Subtotal	\$0	\$105,013	\$408,422	\$275,622	\$735,943	\$1,525,000
Portfolio Total	\$11,692,830	\$7,780,441	\$1,032,074	\$606,085	\$2,649,952	\$23,761,382
Percent Cost by Category	49.21%	32.74%	4.34%	2.55%	11.15%	100.00%

105. Staff notes that TEP's approved 2018 budget totaled \$22,916,762. TEP's proposed budget seeks \$23,761,382 for 2022 and 2023, which represents an increase of \$844,621. This increase includes \$822,949 for the ARC Program with the remaining \$21,672 being for various program costs.

106. Although Staff is not recommending approval of several measures, the individual budgets for these measures were not detailed by TEP. Therefore, Staff was not able to remove the individual measure budgets from the total program/sector budgets.

107. The table below shows the 2018 approved budget, TEP's actual spending in 2021 (from the 2021 Annual DSM Report, filed on March 1, 2022) and the TEP's proposed budget for 2022.

Program	Approved 2018 Budget	Actual Spending 2021	2022-2023 Budget
Residential Sector			
Limited-Income Energy Efficiency	\$1,004,252	\$794,897	\$1,007,966
Multi-Family	\$4,290,458	\$438,584	\$1,150,804
Res. Load Management Pilot Program ³	\$1,575,500	\$0	\$0
Res. New Construction	\$1,028,794	\$879,628	\$989,435
Shade Trees	\$251,652	\$247,516	\$234,245
Existing Homes	\$3,162,972	\$3,545,610	\$3,495,820
Efficient Products	\$1,865,824	\$2,270,870	\$1,856,723
Subtotal	\$13,179,452	\$8,177,105	\$8,734,993
Non-Residential Sector			
C & I Comprehensive ⁴	\$4,184,738	\$2,221,446	\$5,480,410
Commercial New Construction ⁶	\$249,738	\$135,506	\$0
Small Business Direct Install ⁶	\$754,639	\$618,449	\$0
Commercial DLC	\$2,204,377	\$215,128	\$500,000
Schools Energy Efficiency	\$1,000,000	\$845,271	\$1,001,045
Advanced Rooftop Control	\$0	\$0	\$822,949
Subtotal	\$8,393,492	\$4,035,800	\$7,804,404
Behavioral Sector			
Home Energy Reports	\$827,330	\$218,138	\$601,477
Behavioral Comprehensive	\$595,866	\$1,729,499	\$595,509
Subtotal	\$1,423,196	\$1,947,637	\$1,196,986
DSM Initiatives Sector			
Beneficial Electrification Pilot Program	\$0	\$0	\$300,000
Load Management Pilot Program	\$0	\$0	\$2,700,000
Customer Solutions Framework	\$0	\$0	\$1,500,000
Subtotal	\$0	\$0	\$4,500,000
Support Sector			
Education & Outreach	\$400,000	\$395,394	\$500,000
Energy Codes and Standards	\$25,000	\$15,750	\$25,000

³ The 2022 through 2023 budget dollars incorporated into Load Management Pilot as part of DSM Initiatives Sector.

⁴ C&I Comprehensive Program includes the CNC and Small Business Direct Install programs.

Program	Approved 2018 Budget	Actual Spending 2021	2022-2023 Budget
Generation Improvement & Facility Upgrades	\$0	\$0	\$0
R&D Prog. Dev., Analysis & Reporting Software	\$1,000,000		\$1,000,000
Subtotal	\$1,425,000		\$1,525,000
Total DSM Budget	\$22,916,762		\$23,761,383

108. TEP is requesting the flexibility to shift up to 50 percent of an individual program's annual budget between programs or customer segments to enable greater flexibility in providing support for customers. TEP requests the authority to shift unused funds to programs or measures where it is needed and can be deployed effectively. TEP states that the Company is committed to the following:

- Not shifting funds out of the LIEE or Schools EE programs, consistent with current budget shifting guidelines for these programs;
- Providing 60-day notice to the Commission for review and approval of any funding shift; and,
- Continued compliance with all non-dated requirements including the need to maintain an equitable division of DSM funds between Residential and Non-Residential customer segments.

Performance Incentive Calculation

109. In Decision No. 73912, the Commission set the Performance Incentive Calculation ("PIC") for TEP at eight percent of Net Benefits, capped at \$0.0125 per kWh. TEP states that its performance incentive equals \$987,681, as shown below:

Total kWh Savings (2021)	144,893,000
% Net Benefit Cap = (Total kWh savings*\$0.125)	\$1,811,163
Total Net Benefits (2022)	12,346,007
8% of Net Benefits	\$987,681
Performance Incentive	\$987,681

110. With the inclusion of the PIC, TEP's total proposed budget is \$24,749,064.

Demand-Side Management Rates and Surcharges

111. The current Commission-approved DSM assessment rates are \$0.0028898 per kWh for residential customers and 2.8292 percent for non-residential customers. TEP proposes a total DSM Plan budget of \$24,749,064, a DSM Surcharge of \$0.00303423 per kWh of retail sales for residential customers and 2.8597 percent for non-residential customers. TEP states that the revised DSM rates reflect expected costs of adding and implementing the ARC program.

112. The estimated monthly bill impact for residential customers using an average of 807 kWh per month would be approximately \$0.12.

TEP'S Collected But Unallocated 2021 Demand-Side Management Funds

113. TEP's Application states that it proposes to refund a forecasted balance of \$6,059,627 in the DSM balancing account that was over collected by the end of 2021, but unallocated.⁵ Subsequently on May 11, 2022, TEP filed a separate motion with the Commission to modify Decision No. 77085 to allow the refund mentioned in TEP's Application. The Commission ordered TEP in Decision No. 78673 to redeploy these funds, toward four DSM programs already approved by the Commission.⁶

Summary of Staff Recommendations

114. Staff recommends that the Commission approve the removal of the Advanced Power Strips measure from the Efficient Products Program.

115. Staff recommends approval of the Custom Residential HVAC as described herein.

116. Staff recommends approval of Attic Insulation and Air Scaling as described herein.

117. Staff recommends approval of the modification to the LIEE Program (Low-Income Weatherization Program) as described herein.

118. Staff recommends approval of the modifications to the Multi-Family Program as described herein.

119. Staff recommends approval of the revised incentive levels for the New Prescriptive Compliance Path.

⁵ See TEP Application filed June 1, 2021, at page 2, 1st sentence of last paragraph.

⁶ See Decision No. 78673 (August 22, 2022), filed in Docket No. E-01933A-17-0250.

1 120. Staff recommends approval of the eligibility criteria modifications to the Residential
2 New Construction Program.

3 121. Staff recommends approval of the proposed modification to the Shade Tree Program.

4 122. Staff recommends approval of the proposed modifications to the C&I Comprehensive
5 Program.

6 123. Staff recommends approval of the Ductless Mini-Split Heat Pump measure as
7 discussed herein.

8 124. Staff recommends approval of the Indoor Agriculture Dehumidifier measure as
9 discussed herein.

10 125. Staff recommends approval of the LED Panel measure as discussed herein.

11 126. Staff recommends approval of the proposed modifications to the CNC Program.

12 127. Staff recommends approval of the Schools EE Program as a formal program.

13 128. Staff recommends approval of inclusion of the Small Business Direct Install and
14 School Facilities Program as part of TEP's C&I Comprehensive Program.

15 129. Staff recommends approval of the proposed modification to the C&I Demand
16 Response Program.

17 130. Staff recommends approval of the Advanced Rooftop Control Pilot Program.

18 131. Staff recommends approval of the proposed modifications to the Home Energy
19 Reports Program.

20 132. Staff recommends approval of the proposed expansion of the Load Management Pilot
21 Program and the incorporation of the Customer-Sited Energy Storage Pilot as described herein.

22 133. Staff recommends approval of the proposed Rate Optimized Smart Thermostat
23 measure.

24 134. Staff recommends approval of the proposed Connected Pool Pump Controls measure.

25 135. Staff does not recommend approval of the proposed HVAC Thermal Storage
26 measure.

27 136. Staff does not recommend approval of the proposed Customer-Sited Batteries
28 measure.

- 1 137. Staff does not recommend approval of the proposed Connected Electric Water Heater
2 measure.
- 3 138. Staff recommends approval of the proposed Connected Water Heater Control
4 measure.
- 5 139. Staff does not recommend approval of the proposed Electric Forklifts measure.
- 6 140. Staff recommends approval of the proposed Standby Truck Refrigeration measure.
- 7 141. Staff does not recommend approval of the proposed Electric Belt Loader measure.
- 8 142. Staff recommends approval of the proposed Standby Tow Tug measure.
- 9 143. Staff recommends approval of the proposed Standby Pushback Tug measure.
- 10 144. Staff does not recommend approval of the proposed Induction Cooktop measure.
- 11 145. Staff recommends approval of TEP's proposed Innovative Customer Solutions. In
12 addition, Staff recommends that TEP include any energy and peak-capacity savings in its annual
13 DSM Reports.
- 14 146. Staff does not recommend a waiver of A.A.C. R14-2-2404(B), at this time.
- 15 147. Staff recommends approval of the total 2022 DSM Plan Budget of \$23,761,383.
- 16 148. Staff recommends approval of the collection of the calculated performance incentive
17 amount of \$987,681.
- 18 149. Staff recommends approval of the updated DSM Surcharge of \$0.00303423 per kWh
19 of retail sales for residential customers and 2.8597 percent for non-residential customers.
- 20 150. Staff recommends that TEP be allowed to shift up to 50 percent of budgeted funds
21 between program segments with a 60-day notice to the Commission.
- 22 151. Staff recommends that TEP be allowed to increase or decrease incentives with a 60-
23 day notice to the Commission.
- 24 152. Staff recommends that funds budgeted for the LIEE Program and Schools EE
25 Program be prohibited from being moved to other programs.
- 26 153. Staff recommends that the 2022 DSM Plan, total budget, performance incentive, and
27 DSM surcharge amounts be approved herein remain in effect until further Order of the Commission.
- 28 ...

CONCLUSIONS OF LAW

1
2 1. Tucson Electric Power Company is an Arizona public service corporation within the
3 meaning of Article XV, Section 2, of the Arizona Constitution.

4 2. The Commission has jurisdiction over Tucson Electric Power Company and the
5 subject matter of the Application.

6 3. The Commission having reviewed the application and Staff's Memorandum,
7 concludes that it is in the public interest to approve Tucson Electric Power Company's proposed
8 2022-2023 Demand-Side Management Programs and Energy Efficiency Implementation Plan, as
9 discussed herein.

ORDER

10
11 IT IS THEREFORE ORDERED that Tucson Electric Power Company's 2022-2023
12 Demand-Side Management and Energy Efficiency Implementation Plan is hereby approved as
13 discussed herein.

14 IT IS FURTHER ORDERED that the Advanced Power Strips measure is removed from the
15 Efficient Products Program.

16 IT IS FURTHER ORDERED that Custom Residential Heating, Ventilation, and Air
17 Conditioning measure is approved as described herein.

18 IT IS FURTHER ORDERED that Attic Insulation and Air Sealing measure is approved as
19 described herein.

20 IT IS FURTHER ORDERED that the modifications to the Limited Income Energy
21 Efficiency Program (Low-Income Weatherization Program) as described herein are approved.

22 IT IS FURTHER ORDERED that the modifications to the Multi-Family Program are
23 approved as described herein.

24 IT IS FURTHER ORDERED that the eligibility criteria modifications to the Residential New
25 Construction Program are approved as discussed herein.

26 IT IS FURTHER ORDERED that the proposed modification to the Shade Tree Program is
27 approved as discussed herein.

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1 IT IS FURTHER ORDERED that the proposed modifications to the Commercial and
2 Industrial Comprehensive Program are approved as discussed herein.

3 IT IS FURTHER ORDERED that the Ductless Mini-Split Heat Pump measure is approved
4 as discussed herein.

5 IT IS FURTHER ORDERED that the Indoor Agriculture Dehumidifier measure is approved
6 as discussed herein.

7 IT IS FURTHER ORDERED that the LED Panel measure is approved as discussed herein.

8 IT IS FURTHER ORDERED that the proposed modifications to the Commercial New
9 Construction Program are approved as discussed herein.

10 IT IS FURTHER ORDERED that the Schools Energy Efficiency Program is approved as a
11 formal program as discussed herein.

12 IT IS FURTHER ORDERED that the Small Business Direct Install and School Facilities
13 Program shall be included as part of Tucson Electric Power Company's Commercial and Industrial
14 Comprehensive Program.

15 IT IS FURTHER ORDERED that the proposed modification to the Commercial and
16 Industrial Demand Response Program is approved as discussed herein.

17 IT IS FURTHER ORDERED that the Advanced Rooftop Control Pilot Program is approved
18 as discussed herein.

19 IT IS FURTHER ORDERED that the proposed modifications to the Home Energy Reports
20 Program are approved as discussed herein.

21 IT IS FURTHER ORDERED that the proposed expansion of the Load Management Pilot
22 Program and the incorporation of the Customer-Sited Energy Storage Pilot Program are approved
23 as described herein.

24 IT IS FURTHER ORDERED that the proposed Rate Optimized Smart Thermostat measure
25 is discussed as approved herein.

26 IT IS FURTHER ORDERED that the proposed Connected Pool Pump Controls measure is
27 approved as discussed herein.

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1 IT IS FURTHER ORDERED that the proposed Heating, Ventilation, and Air Conditioning
2 Thermal Storage measure is not approved.

3 IT IS FURTHER ORDERED that the proposed Customer-Sited Batteries measure is not
4 approved.

5 IT IS FURTHER ORDERED that the proposed Connected Electric Water Heater measure is
6 not approved.

7 IT IS FURTHER ORDERED that the proposed Electric Forklifts measure is not approved.

8 IT IS FURTHER ORDERED that the proposed Standby Truck Refrigeration measure is
9 approved as discussed herein.

10 IT IS FURTHER ORDERED that the proposed Electric Belt Loader measure is not
11 approved.

12 IT IS FURTHER ORDERED that the proposed Standby Tow Tug measure is approved as
13 discussed herein.

14 IT IS FURTHER ORDERED that the proposed Standby Pushback Tug measure is approved
15 as discussed herein.

16 IT IS FURTHER ORDERED that the proposed Induction Cooktop measure is not approved.

17 IT IS FURTHER ORDERED that the proposed Innovative Customer Solutions measure is
18 approved as discussed herein.

19 IT IS FURTHER ORDERED that Tucson Electric Power Company shall include any energy
20 and peak capacity savings from the Innovative Customer Solutions measure in its annual Demand-
21 Side Management Reports.

22 IT IS FURTHER ORDERED that Tucson Electric Power Company's request for a waiver
23 of Arizona Administrative Code R14-2-2404(B) is denied.

24 IT IS FURTHER ORDERED that Tucson Electric Power Company's total 2022 Demand-
25 Side Management Plan Budget of \$23,761,383 is approved.

26 IT IS FURTHER ORDERED that Tucson Electric Power Company's collection of the
27 calculated performance incentive amount of \$987,681 is approved.

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1 IT IS FURTHER ORDERED that Tucson Electric Power Company's updated Demand-Side
2 Management Surcharge of \$0.00303423 per kWh of retail sales for residential customers and 2.8597
3 percent for non-residential customers is approved.

4 IT IS FURTHER ORDERED that Tucson Electric Power Company may shift up to 50
5 percent of budgeted funds between program segments with a 60-day notice to the Commission.

6 IT IS FURTHER ORDERED that Tucson Electric Power Company may increase or decrease
7 incentives with a 60-day notice to the Commission.

8 IT IS FURTHER ORDERED that Tucson Electric Power Company is prohibited from
9 moving funds budgeted for the Limited Income Energy Efficiency Program and Schools Energy
10 Efficiency Program to other programs.

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1 IT IS FURTHER ORDERED that Tucson Electric Power Company's 2022-2023 Demand-
2 Side Management and Energy Efficiency Implementation Plan, total budget, performance incentive,
3 and Demand-Side Management surcharge amounts as approved herein remain in effect until further
4 Order of the Commission.

5 IT IS FURTHER ORDERED that this Decision shall become effective immediately.
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8 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**
9

10 _____
11 CHAIRWOMAN MÁRQUEZ PETERSON

COMMISSIONER KENNEDY

12
13 _____
14 COMMISSIONER OLSON

COMMISSIONER TOVAR

COMMISSIONER O'CONNOR

15 IN WITNESS WHEREOF, I, MATTHEW J. NEUBERT,
16 Executive Director of the Arizona Corporation Commission,
17 have hereunto, set my hand and caused the official seal of this
18 Commission to be affixed at the Capitol, in the City of
19 Phoenix, this _____ day of _____, 2022.

20 _____
21 MATTHEW J. NEUBERT
22 EXECUTIVE DIRECTOR

23 DISSENT: _____

24 DISSENT: _____

25 EOA:CCN:elr/MGC
26
27
28

1 Tucson Electric Power Company
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